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Kentucky Naturalist News

Official Newsletter of the Kentucky Society of Natural History

Volume 67, Number 1, Spring 2009

Website: http://www.ksnh.org

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Arches of the Cumberland Chapter (Slade) meets informally, call President Dell Sasser for details, 606-666-7521 x73559 or (606) 663-9379.

Falls of the Ohio Chapter (Louisville) meets every 3rd Thursday of each month except Jan, Jul, Aug, & Dec at 7:00 PM at the Louisville Nature Center, 3745 Illinois Ave, Louisville, 40213. Call President Chris Bidwell at (502) 458-1328.

Wilderness Trail Chapter (Pineville) meets the first Thursday of each month, March through December, at 7:00 p.m., generally at Pine Mountain State Resort Park, 1050 State Park Road Pineville, KY 40977-0610 (800-325-1712).

Podophyllum peltatum **L., 1753 (mayapple) - Barry Nichols, 2006**

EDITOR'S NOTES

This issue contains the 2009 Spring Meeting agenda for Pine Mountain Settlement School. It also contains not one, but TWO opportunities to assist in important survey work, namely NestWatch and the Nightjar Survey Network. That's not all, Falls of the Ohio Chapter President and regular Kentucky Naturalist News contributor Chris Bidwell was awarded the William Clay Award by the Falls of the Ohio Chapter! Wally Roberts announces the Fall 2009 meeting at Reelfoot Lake. Wally also writes of Smoky Mountain Memories, and we announce the winners of last issue's Newsletter Photo Contest and begin the contest for this issue (topic = clouds).

We welcome Paul Florence as KSNH's new Invertebrate Coordinator! Paul got his MS degree from University of Louisville's Biology Department. His thesis was titled, "Habitat Preferences in Dragonflies." He's currently an

Associate Professor of Biology at Jefferson Community & Technical College in Louisville.

The Newsletter Photo Contest topics for the remainder of 2009 are contained in that section. We're changing the judging somewhat starting with this issue. Judging will be done once the deadline is passed so that the photos are printed with the winners in the same issue. The winners of the last issue are reported in this issue as well. Remember that the topic for the Summer 2009 KNN issue Photo Contest is **Kentucky Amphibians and/or Reptiles**.

By the way, if there is a topic you'd like to see covered in KNN, whether it be a species, habitat, conservation effort, landform, geologic feature, mineral, celestial body, or basically anything related to natural history, please let me know and I'll do my best to find an author to address it.

As always, please mail any articles, news, photos, etc to kyfauna@iglou.com **–ed**

2008 FALLS OF THE OHIO CHAPTER WILLIAM CLAY AWARD WINNER – CHRIS BIDWELL

by W. H. (Wally) Roberts

The Kentucky Society of Natural History Falls of the Ohio Chapter presents the William Clay Award to a Chapter member in recognition of service. The William Clay Award was presented to Chris Bidwell at the Falls of the Ohio Chapter Christmas dinner in December, 2008. Chris has served as President of the Chapter for the past four years. Prior to becoming the Falls of the Ohio Chapter President, Chris volunteered his time and energy helping to plan and lead field trips. As President, he continues to oversee the Chapter as well as planning and leading field trips and other activities. Chris is devoted to learning about and sharing information on Kentucky's Natural History. We owe Chris our gratitude for serving the Kentucky Society of Natural History and promoting the KSNH mission. Thank you, Chris. (photo by Susan Wilson)

ENJOYING NATURE MORE THROUGH NEST MONITORING

by Tina Phillips

Across North America, longer days and warmer temperatures signal the perennial influx of birds onto their breeding grounds. While migratory and resident birds are staking out territories, thousands of nest monitors—people who monitor the activity of nesting birds—anxiously await their arrival. For some nest monitors, this is a passing hobby, for others, it defines who they are in the spring and summer. And increasingly, experts in the psychology, communication, and environmental fields are confirming what nest monitors and nature enthusiasts have always known – spending time in nature is good for the mind, body, and perhaps even the soul.

Many nest monitors take their passion for birds one step further and become citizen scientists, engaging in organized research with local, state, or national groups in order to share their observations with others. Citizen science, a term coined by the Cornell Lab of Ornithology (CLO), provides nature enthusiasts with meaningful opportunities to enjoy nature while also helping to advance scientific research and conservation efforts. The CLO has several citizen science projects that rely on volunteers to collect data on birds via standardized protocols. The strength of this technique to collect large amounts of data is its ability to gather information across huge scales, both in time and space, in order to answer biologically relevant questions.

***Sialia sialis* (Linnaeus, 1758) (Eastern bluebird)- T. Saunders**

Citizen science also helps alleviate the problem of researcher access to private lands. It is estimated that nearly 75% of threatened and endangered birds occur on private property and that nearly three quarters of all forests in the United States are also privately owned. In Kentucky for example, about 95% of the land is privately owned. As natural landscapes continue to decrease, birds and other wildlife will increasingly make use of private lands to survive and breed. Having citizen scientists report how birds use these lands helps to fill a huge gap in our knowledge about habitat quality and its effects on birds.

NestWatch is the Cornell Lab of Ornithology's newest citizen science project that teaches people how to effectively monitor bird nests and report breeding data. Funded by the National Science Foundation (NSF) and developed in collaboration with the Smithsonian Migratory Bird Center, NestWatch engages birdwatchers of all skill levels to repeatedly monitor bird nests, collect breeding data, and submit their nest records online where they are permanently archived. The data can be accessed and studied by scientists and the public alike.

Tammie Saunders (Caldwell County Elementary School, Princeton, KY) monitors a nest box

NestWatch accepts data from all nesting birds in North America, thereby allowing us to detect changes in reproductive timing and fledging success across a range of species and geographic areas. Since most NestWatch participants are monitoring birds in their yards and neighborhoods, the data can also be used to understand how birds use human modified habitats such as backyards, fragmented wood lots, golf courses, and roadways, and what affect these landscapes have on nesting success.

Although NestWatch officially launched in 2008, it contains more than 85,000 nest records and its protocol for monitoring nests is based on the historic Cornell Nest Record Card Program, which dates back to 1965. This program relied on volunteers to monitor nests on a regular basis and record what they observed during each visit on standard 3x5 data cards. During its 40+ years in operation, the Cornell Nest Record Card Program amassed over 330,000 nest records from 600 species of breeding birds across North America. Plans are underway to incorporate this enormous dataset into NestWatch, making it the largest database of its kind in North America.

Long-term datasets are critically important in order to maintain baseline information about individual species to monitor trends over time. Increasingly, these datasets also are being used to study how birds respond to climate change. For example, recent studies have shown that in warmer climates, egg-hatching failure is more prevalent, and that on average, birds are beginning to lay eggs earlier. In order to track nesting success as a function of climate change it is crucial that we continue to monitor how well birds are breeding through projects like NestWatch.

Developed with a broad array of audiences in mind, NestWatch invites backyard birders, nest-box monitors, school groups, wildlife refuges, bird observatories, state atlas projects, public land managers and anyone with an interest in birds to participate. There is no fee to join, and no minimum number of nests required, although on average, individual NestWatchers monitor between 20 and 25 nests!

The first step to becoming a responsible nest monitor is to learn which birds typically occur and breed in your region during the spring and summer.

Troglodytes aedon **(Vieillot, 1809) (house wren) eggs - B. Zimmerman**

Kaycee Lichliter checking a bluebird nest box

Beginners are encouraged to focus their efforts on the NestWatch focal species - 25 of North America's most common nesting birds, chosen because of their relative abundance and their tendency to nest in human-modified habitats such as backyards. Focal species include the American Robin, Eastern Bluebird, Tree Swallow, Eastern Phoebe, Mourning Dove, and other common birds that are easy for beginners to identify and quite tolerant of regular nest checks. Since many of the focal species exist throughout urban, suburban, and rural landscapes, they are ideal subjects to examine how factors such as predation, land use changes, cowbird parasitism, and climate change vary across the urban-to-rural gradient.

Additionally, about half of the focal species are cavity-nesters that readily nest in a nest box or birdhouse, making them even more accessible for monitoring. Providing nest boxes for the 40+ species of cavity-nesting birds can offset the shortage of natural cavities in otherwise adequate habitat. In fact, it is widely believed that the increase in nesting sites provided by nest-box monitors helped to reverse the noticeable decline of the Eastern Bluebird, now considered fairly common in our region. Other common species like Black-capped Chickadees, House Wrens, Tree Swallows, Tufted Titmouse, American Kestrels, Barred Owls and Wood Ducks can also benefit from artificial nesting sites. Visit our resource center at www.nestinginfo.org for more information about providing and building nest boxes for specific birds.

Providing a nest box however, is only the first step. To truly benefit our feathered friends and aid in conservation efforts, careful monitoring at the nest is equally important. People are usually surprised to learn that regular, careful nest checks rarely lead to nest abandonment or harm to birds. The key to responsible nest monitoring is to be as unobtrusive as possible and abide by the NestWatch Code of Conduct, one of many instructional support materials available at the NestWatch web site. After reading the Code of Conduct, NestWatch participants can test their understanding by taking the interactive nest monitor certification quiz. Other online support materials include the NestWatch manual, how-to videos, and a discussion forum for participants to communicate with each other and NestWatch staff.

As a general rule, nest monitors should avoid checking nests in the early morning during egg laying, during the first few days of incubation, in bad weather, and when the young are close to leaving their nest. Nest monitors work quietly and efficiently but will often sing a song as they approach a nest so as to not startle a bird. If an adult leaves the nest upon your arrival, check the nest quickly, being careful not to touch eggs or young and record your observations away from the nest. If you approach a nest with a sitting adult do not force her out—instead leave the area and check the nest another day. If necessary, observe the nest from a distance or through binoculars.

Although the NestWatch protocol for monitoring nests is flexible, the most robust data will come from nests that are monitored at least once, but preferably twice per week. Information collected includes location, habitat, species, number of eggs and young in the nest, and important dates such as first egg, hatch and fledge dates. Volunteers enter their field observations online as the season progresses or at the end of the season. All nest records are permanently stored in our online database and can be retrieved and downloaded at any time. We also provide Google map queries to visualize for example, how clutch size varies across a bird's breeding range.

***Falco sparverius* L., 1758 (American kestrel) female with young in nest box - A. Droske,**

Whether you are a beginner or expert nest monitor, your nest observations can contribute to our understanding of impacts of environmental change on avian reproductive biology. With these basic breeding variables, we can track changes in reproductive timing and fledging success as well as daily nest survival (i.e., the proportion of nests that did not fail on a given day, while the nests were under observation). NestWatch provides the long-term infrastructure for a continent-wide, centralized database on breeding birds that can be used to address important conservation issues at relevant and previously unattainable spatial scales.

Together, our community of volunteers, whether contributing data from a backyard, a nest-box trail or a wildlife refuge, provide critical data needed to understand the factors that limit breeding success across the continent. In addition to the satisfaction of making meaningful contributions to science, NestWatch participants enjoy the positive restorative benefits of being outdoors and experiencing nature first hand. To learn more about how you can become a NestWatch participant, please visit www.nestwatch.org.

***Tina Phillips** is project leader for NestWatch and NestCams, two of the Cornell Lab of Ornithology's citizen science projects. Currently, pursuing a PhD in science education at Cornell University, she is interested in the relationship between citizen science participation and environmental literacy and behavior.*

NOTES FROM THE NATURE NUT:
SMOKY MOUNTAIN MEMORIES OF MOUNT LECONTE

by W. H. (Wally) Roberts

Over the years, my friends and I have hiked more than 1500 miles of trails in and around the Great Smoky Mountains National Park. All of these hikes have left, what I like to call, special moments in time with friends. I took my first hikes in the Smokies with my Dad while fishing for trout during the 1960's. My friends and I started serious hiking in the Smokies every chance we could get, mainly during the spring and summer teacher breaks, in the early 1970's. In the beginning, we were tent campers, but eventually purchased a pop-up camper which many of you may remember from KSNH conferences.

All the trails in the Smokies leave lasting memorable moments; but the most memorable of all remain of our trips to Mt. LeConte Lodge. We have visited Mt. LeConte approximately a dozen times over the years. Sometimes hiking up and down the same day, but most often staying overnight at the lodge on top of LeConte.

During the early years, the National Park had not yet been designated as a wilderness area unlike its present status as an World Biosphere Reserve. LeConte Lodge guests were still allowed to pick up fallen wood to burn in stoves to heat the cabins. A huge garbage dump near the lodge attracted scavengers including black bears which eventually became problem animals, and there was not a registration system in place for backcountry shelters such as the one on LeConte where over 150 people camped on a Saturday night in October during the early seventies.

During the spring school break of 1975, Larry Houston and I invited fellow faculty member, Mary Jane Inman, and her teenage daughter, Julia, to accompany us on a week-long camping and hiking trip to the Smokies. This trip occurred during the week of April 15th, and still remains as one of my most lasting memories in the Smokies. The following excerpts are taken directly from our journal dated April 14 and 15, 1975:

We decided to base tent-camp at the Park service's Elkmont Campground outside Gatlinburg because of its central location. We had reservations for Mt. LeConte Lodge on April 13th, but could not go on that day due to heavy rain. We called LeConte and switched our reservations to the following day (Note: This is something you could do in the 1970's, however, it would not be possible today due to the overwhelming demand for reservations.)

We left Mary Jane's car at the Cherokee Orchard parking area and proceeded in my station wagon up Roaring Fork Motor Nature Trail to the Trillium Gap Trailhead parking area. As we hit the trail, the air temperature was 65 degrees and a light rain was falling. After visiting Grotto Falls on the muddy trail, the weather began to cool and, at 4000 feet, the rain began changing into ice, sleet, and snow. A train of supply horses passed us on the way to LeConte, and again on their downward journey carrying empty refillables and staff mail. By that time, most everything was covered with ice; and we quickly downed a cold trail lunch at Trillium Gap but found little or no shelter from the biting cold wind and ice.

We continued up the trail below the cliff-line along several icy ledges as the increasing ice layered and crackled upon the trees. We gingerly traversed a frozen waterfall, a spot where we later learned one of the pack horses had slipped and fallen to its death the week before. We arrived at the lodge hot from hiking while cold from the elements, tired, and, at the same time, afraid to touch our hair, eyebrows, and mustaches for fear of the ice covered hairs would break off. We checked in at the lodge, warmed our bodies with hot chocolate, and dried our clothes. It seemed, at that time, as though we were the only hikers on the mountain.

We entered our small three room cabin and were disappointed to find there was no fire in the stove. On previous trips, we simply gathered wood outside; but this time the heavy rains and ice coating made burning the wood impossible. But, alas, we spied a pile of new froe-hewn wooden shakes intended for roof repairs. The shakes doused with a little kerosene from the lanterns, quickly warmed the room.

Supper was served at the main lodge; and we shared the meal with a park service trail crew who were stationed on the mountain to clear storm-blocked trails. During our meal conversations, we found out that this was the same trail crew that had found two Eastern Kentucky University students lost in a snow storm two weeks earlier on the Appalachian Trail, one of whom had died of hypothermia.

Upon returning to our cabin, we discovered a most interesting lady sharing our accommodations. Her name was Gracie Mae McNichol. Gracie McNichol was born October 1, 1891, had practiced nursing in every state of the Union (including Alaska during the gold rush era) and was making her 169th trip to LeConte Lodge. Gracie came so often that LeConte provided her a private room in our cabin, and she carried her own food. She was so interesting that we talked from 7:00 pm to 11:00 pm before turning in for the night. When the shakes for the fire were used up, the winds had increased to over 30 mph. The door to our cabin kept blowing open and had to be propped shut with a chair. The night was painfully cold, without heat, and, despite the layers of Hudson Bay blankets, one could hear Mary Jane, a Spanish teacher, cursing in Spanish all night long. None of us got much sleep that night. In the morning, when we checked on Gracie Mae, we first thought she might have frozen to death; however, she began to stir when we spoke her name.

The morning brought clear skies and one of the most incredible hoar frosts I had ever seen. Ice crystals covered everything …extending 3 inches or more on the lee sides. After breakfast, we bade farewell to Gracie and the trail crew and headed down the Bullhead Trail that seemed like walking through an ice cathedral as we descended the mountain into the beautiful Sugarland Valley.

I have hiked to LeConte many times since, met Gracie on the mountain again, but this one trip remains fixed in my memory as a very special time.

Gracie Mae McNichol took her 244th trip to Mount LeConte to celebrate her 92nd birthday. She didn't begin climbing LeConte until the age of 62 years. As she approached her 100th birthday, Gracie told a friend, "I'm climbing Mount LeConte in my mind this year". Gracie died at the age of 100 years in 1991. I take pride in having known Gracie Mae McNichol; and I am honored that she signed my Hiker's Guide to the Smokies on that memorable day in April, 1975.

***Wally Roberts** was Kentucky Naturalist of the Year 2002. He is a long-time biology instructor, interpretive naturalist, and nature photographer. He graduated with a BS in Biology from Morehead State University, and MEd in Biological Education from the University of Louisville. He's been president of KSNH (3 times), former president of the Falls of the Ohio Chapter, and past president of the Board of the Louisville Nature Center. He's currently the Grant Coordinator for KSNH.*

THE UNITED STATES NIGHTJAR SURVEY NETWORK NEEDS PARTICIPANTS IN 2009

By Kate Heyden

The **Center for Conservation Biology** developed the **United States Nightjar Survey Network** in 2007 to begin the process of collecting data on the population distribution and population trends of nightjars. Very little is known about nightjar biology. Prior to this program there was no widespread monitoring strategy for nightjars. Conservation-minded citizens, biologists, and other like-minded groups fuel the Nightjar Survey Network by volunteering to conduct survey routes. Objectives of this project include gaining a better understanding of the population distribution and habitat use of nightjars, as well as, detecting population changes on the long-term.

Chordeiles minor **(J. R. Forster, 1771) (common nighthawk) by Kate Heyden**

Participation is easy. Surveys are conducted along roads, at least 30 minutes after sunset, between moonrise and moonset and should take less than two hours to complete. Survey routes are comprised of 10 roadside stops which are roughly one mile apart. Data forms can be submitted electronically via the Nightjar survey Network website or by mail to United States Nightjar Survey, Center for Conservation Biology, College of William and Mary, Williamsburg, VA 23187-8795.

Those who participate will need:

1. Suitable transportation to complete a survey
2. Good hearing to count birds at a distance
3. Ability to recognize and differentiate calls of the three Kentucky nightjar species
4. Commitment to conduct a survey, once per year, for 3 or more years
5. Ability to schedule surveys during the survey window. (The 2009 survey windows are May 31-June 15 and June 29-July 15). Nocturnal behaviors of nightjars are strongly influenced by moonlight. Thus, survey windows are restricted to bright moonlit nights.

Please visit the Nightjar Survey Network website (http://www.ccb-wm.org/nightjars.htm) to sign up for a survey route. Most Kentucky routes are currently vacant and your help is needed. At the website, you can also view project objectives and a report on findings from the initial years of survey. The website also has an informative Nightjar Pamphlet available that you may share with friends.

The species of nightjars that occur in Kentucky during the breeding season include:

Caprimulgus vociferus A. Wilson, 1812 (whip-poor-will) can be found statewide.
Caprimulgus carolinensis J. F. Gmelin, 1789 (chuck-will's widow) is found primarily west of the Cumberland Plateau.
Chordeiles minor (J. R. Forster, 1771) (common nighthawk) can be found statewide.

Visit http://www.enature.com or http://www.birds.cornell.edu/AllAboutBirds/BirdGuide and search for nightjar species to learn more about species identification.

This program's success relies entirely on volunteer participation and is a great way to get involved with avian conservation in Kentucky. The efforts of volunteers and those which help recruit volunteers are much appreciated.

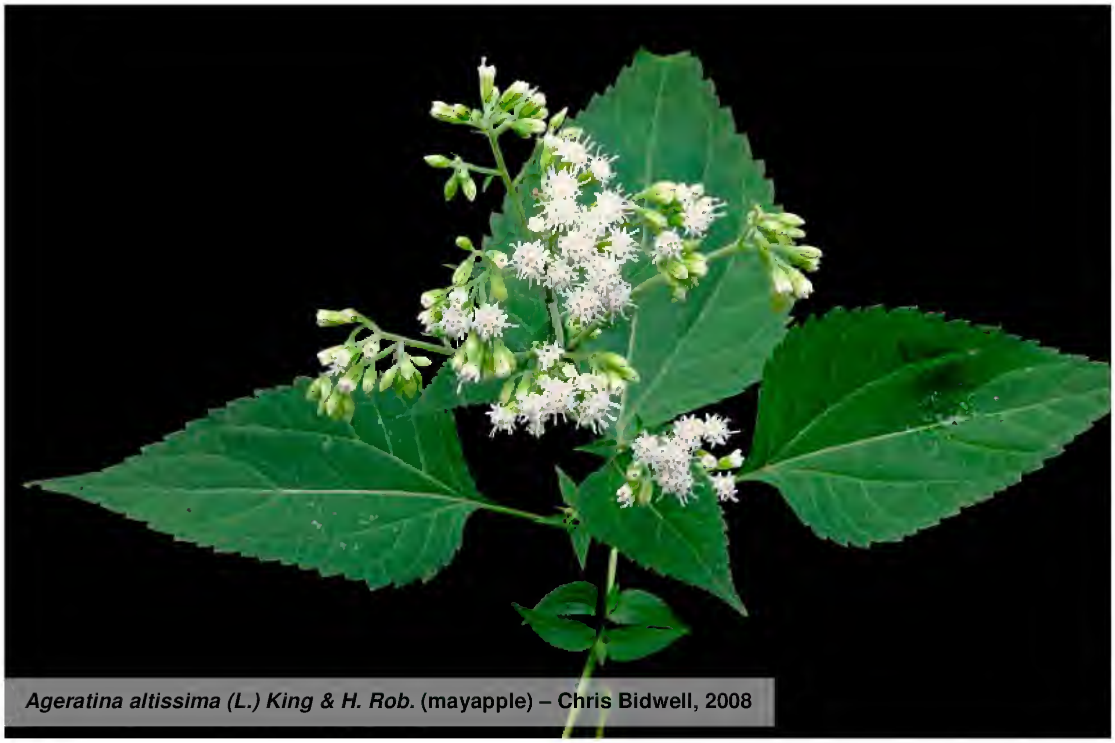
***Kate Heyden** is an avian biologist for the Kentucky Department of Fish & Wildlife Resources. She specializes in raptors and songbirds. She previously worked on red-cockaded woodpeckers in Louisiana before moving to Kentucky to work with the state about a year ago.*

WHITE SNAKEROOT – *AGERATINA ALTISSIMA* (L.) R. M. KING AND H. E. ROBINS

by Chris Bidwell

In keeping with Abraham Lincoln's Bicentennial birth celebration, it is appropriate to discuss a plant that is very much a part of the Lincoln family history and much to do in forming the very character of Abraham at an early age. Abraham's mother, Nancy Hanks Lincoln, was born February 5, 1784. She married Thomas Lincoln on June 12, 1806 and bore three children: Sarah, 1807; Abraham, 1809; and Thomas, 1812. In 1816 Thomas and Nancy, with their immediate family and other relatives, moved to southern Indiana and settled in the small town of Little Pigeon Creek in Spencer County. Just two years later, Nancy and several other relatives would die of the "milk sickness", a disease brought on by drinking unpasteurized, toxic milk of cows suspected of eating the poisonous white snakeroot plant (*A. altissima*). Nancy died October 15, 1818 at only 34 years of age. Abraham was only 9 years old and his mother's death deeply impacted his early life. Abraham, in recalling his mother's death, would remember carving pegs for her coffin. In one of his few autobiographies, he states: "All that I am, or hope to be, I owe to my angel Mother". At 9 years old and with only a slightly older sister left to provide any maternal comfort, Abraham surely missed his mother's love and guidance.

White snakeroot was given the species name, *Ageratina altissima* by Linnaeus. It is a common, native perennial found from Texas northward to North Dakota and includes all the states east of this line. The plant is most abundant and distributed in Ohio, Illinois, and Indiana. The plant is adaptive to various growing conditions and can be found in open shade areas, woodland borders, seeps, bluffs, riparian areas, vacant lots, backyards, and dry to mesic woods throughout Kentucky. It is in bloom from July to October. White snakeroot has many common names: richweed, fall poison, white topped deerwort/boneset, white sanicle, Indian sanicle, squawweed, milk sick cove/holler/ridge/knob, and tall boneset. White snakeroot was recently changed from the genus *Eupatorium* to the genus *Ageratina*. Some texts still refer to white snakeroot as *Eupatorium rugosum*. It is in the aster/composite family (Asteraceae). The current genus, *Ageratina*, is a diminutive of the *Ageratum* genus suggesting the genera are similar. The specific epithet, *altissima*, means tall and refers to the fact that the plant can reach up to 1.5 meters tall. White snakeroot, the more common name in Kentucky, comes from the white flowers and called Snakeroot from an erroneous belief among native Indians and early settlers that the plant's rhizomes, used as a poultice, could cure snake bites. The plant is very aggressive and can dominate an area under ideal conditions. It is listed as an invasive weed in some texts.



***Ageratina altissima* (L.) King & H. Rob.** **(mayapple) – Chris Bidwell, 2008**

The leaves are opposite, coarse, sharply-toothed with teeth pointing toward the leaf tip. The cordate/ovate leaves can be up to 7 inches long and 5 inches wide and may be slightly hairy on the underside along the main vein. Petioles/ leaf stalks are 1/4 to 1/3 the length of the leaf blade. The white flowers are borne on the upper stems in compound corymbs that can be several inches across. The flower heads are about ½ inch across and contain 10-30 disk florets with small 5-lobed corollas that are often fragrant. It is one of the last fall-blooming wild flowers in Kentucky. The flowers are pollinated by a host of insects drawn in by the nectar and pollen. Pollinators include many species of bees, wasps, flies, butterflies, and moths. Some caterpillars are also known to feed on the leaves (tiger moths). Most herbivore mammals avoid the plant due to its toxic nature. The seeds which develop are achenes and are distributed by the wind. White snakeroot can also spread by its rhizomes.

White snakeroot contains the toxin tremetol/tremetone. Cattle, horses, sheep, swine, and goats, if allowed to graze this plant, will have their meat and milk contaminated. This toxin can then be passed on to humans who have ingested the animal products as a food source. Signs and symptoms of the "milk sickness" disease in herbivores include: lethargy, excessive nasal discharge and salivation, seizures, difficulty in breathing, fever, trembling, severe constipation, acetone breath, prolonged vomiting leading to severe dehydration/weight loss, uncoordinated gait, and coma. Death follows if significant snakeroot is ingested. All parts of the plant are poisonous with the roots being the most toxic plant part.

The disease in humans who have ingested contaminated meat/milk from affected animals also can develop "milk sickness". The disease in man is also known as puking fever, slows, trembles, and sick stomach. This disease in humans causes loss of appetite, lethargy, muscle aches/stiffness, halitosis, severe constipation, dehydration, from protracted vomiting which can lead to seizures, coma, and eventually death in severe cases. Recovery in man and animals is possible in minor ingestions of the toxin tremetol. Milk sickness was first described/diagnosed in medical terms by Dr. Thomas Barbee of Bourbon County, Kentucky in 1809. Ironically this was same year Abraham was born. Bloodletting was employed as a treatment, with no success.

In October, 1818, Nancy Hanks Lincoln died from the milk sickness disease. Lincoln's law partner and biographer, William Herndon, described the disease as such: "It hovered like a spectre over the Pigeon Creek settlement for over 10 years, and its fatal visitation and inroads among the Lincolns, Hawkses, and Sparrows finally drove that contingent into Illinois. To this day the medical profession has never agreed upon any definite cause for the malady … A fatal termination may take place in 60 hours, or life maybe prolonged for a period of 14 days…".

The search for the cause of the milk sickness underwent many wrong directions. As early as 1838, two separate layperson's experiments had shown white snakeroot to be the culprit. Their findings were published in local newspapers and even sent to some of the country's leading medical people who merely dismissed their findings as false. This lack of follow up and censure by the medical profession set the search back nearly a century.

In 1838, an Ohio farmer, John Row, suspected white snakeroot as the cause. He fed leaves to some of his cattle which develop the sickness and died. The farmer published his exciting findings in the local newspaper. The famous physician, Dr. Daniel Drake, denounced the farmer's experiment as Dr. Drake was sure that poison ivy was the cause! Dr. Drake's negative actions and failure to further investigate set back milk sickness research, diagnosis, and treatment for several decades. About the same time as John Row was discovering white snakeroots toxicity, a pioneer woman, Anna Bixby, came into the Illinois frontier with her family. Ms. Bixby was so upset with the poor health and death rate on the frontier that she returned to Pennsylvania to take training in nursing, midwifery, and dental extractions, which were the only medical courses women could take at that time. She returned to Illinois and practiced as Dr. Anna. A milk sickness epidemic swept through her community and she noted in her diary that the deaths followed those who ingested milk. Anna tried to locate the plant which the cows grazed upon but was unsuccessful until she met an Indian medicine woman known as Aunt Shawnee. She took Dr. Anna into the fields and showed her white snakeroot. Like Mr. Row, Dr. Anna tested the plant on a calf which died. Through her efforts to eradicate white snakeroot from the fields, the dreaded milk sickness was almost eliminated from southeast Illinois in 3 years. Dr. Anna wrote letters back East to famous physicians who, like Dr. Drake, also ignored her and Aunt Shawnee's work.

It was finally in the 1920's that research at the United States Department of Agriculture, led by Dr. James Couch, isolated the toxic alcohol tremetol from white snakeroot and was researched and determined to be the cause of the silk sickness. With fencing laws and supervised milk production since the 1920's, the disease is rarely encountered now.

White Snakeroot did have several supposed medical/folklore usages. Native Americans used the plant's leaves in a tea to treat diarrhea (which is effective) and kidney stones. They also used smoke from the leaves to try to revive comatose patients. White/Indian Sanicle, one of the common names of white snakeroot, derives its name (sanicle) from the Middle English/Medieval Latin word *sanicula*, probably from the Latin, *sanus*, which means healthy or healing. However due to the poisonous nature of this plant medical usage is not regarded as safe or effective.

This summer look for (but don't eat!) white snakeroot. Its beautiful white flowers and fragrance adds color and character to the summer woods. The plant's seed are also used by numerous small birds as a fall/winter food source. Reflect on how this plant impacted Abraham Lincoln and other pioneers and Native Americans throughout Illinois, Indiana, Ohio, and Kentucky. Enjoy the natural world.

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***Chris Bidwell** is an amateur naturalist and the current President of the Falls of the Ohio Chapter of KSNH.*

KENTUCKY SOCIETY OF NATURAL HISTORY ANNUAL SPRING CONFERENCE
PINE MOUNTAIN SETTLEMENT SCHOOL - APRIL 24 – 26, 2009

NOTES:

- **Pine Mountain Settlement School is located within the Eastern Time Zone**
- **All drive times are estimated and for one way, starting from Pine Mountain Settlement School**

Field Trip Ratings:

Easy:	Hiking short distances usually on trails with little slope.
Moderate:	Generally easy with a comfortable pace. Participants must be able to negotiate occasional steep slope and/or rough trail.
Strenuous:	More endurance required to negotiate longer stretches of steep slopes and rough trail.

*** Be careful on all of the field trips and watch your step. Also, watch above your head for dead trees and limbs which could fall. When carpooling to and from field trips be careful driving on the steep, winding roads. Be safe and have a great Spring Conference.

FRIDAY, APRIL 24, 2009

Field Trips for Early Arrivals (Early Bird Special)

1:00 – 4:00 **Pine Mountain Settlement School's Railroad/Dogwood Trail** – Numerous trails on campus offer outstanding natural experiences, but botanically (plant lovers) this trail is probably the most diverse. Participants will see a variety of spring wildflowers on this trip, and may get a glimpse at a beaver, shore birds, or water fowl in the large beaver pond complex.

Drive Time – N/A **Rating – moderate** **Trip Leader – Ben Begley**

6:00 **Dinner (locally called Supper) at Pine Mountain Settlement School**

6:30 **Late Registration (Laurel House)**

7:00 **Evening Program Starts:**

Welcome and Introductions – Joe Settles

Children's Program Topics – Jeff Foster

Photography Program Topic – Topic for spring meeting will be "KENTUCKIANA MOUNTAINS" **– Chris Bidwell**

General Topics – Open to All

Research Grant Presentation – FAUNISTIC SURVEY OF NATIVE AND INVASIVE SLUGS IN KENTUCKY USING MORPHOLOGICAL AND MOLECULAR TECHNIQUES. **Anna Thomas, a masters candidate received $450 from KSNH toward her research. University of Kentucky Department of Entomology.**

Featured Presentation #1 – "EASTERN SMALL-FOOTED BAT (*MYOTIS LEIBII*) STATUS AND SUMMER HABITAT USE" – **Joseph Johnson**

SATURDAY, APRIL 25, 2009

7:00 – 8:00 **Early Morning Bird Walk on Pine Mountain Settlement School's Campus –** This trip is for all of the society's hard-core birders. No other birder knows where to find birds at Pine Mountain Settlement School like the person who volunteered to lead this outing. Weather dependent, highlights may include as many as thirty bird species, including a number of neotropical migrants and the state listed common raven.

Drive Time – N/A **Rating – easy** **Trip Leaders – Ben Begley**

8:00 **Breakfast at Pine Mountain Settlement School**

Full Day Field Trips

9:00 – 4:00 **Blanton Forest State Nature Preserve** – Visit one of Kentucky's prized natural areas with an extremely talented naturalist, who has spent his entire life in the shadows of Pine Mountain. Enjoy a quite hike through many different forest types and learn all you wanted and even more about this spectacular nature preserve. Highlights will include impressive geological features, and many spring flowering plants.
Drive Time – 60 minutes **Rating – Strenuous** **Trip Leader – Kyle Napier**

Morning Field Trips

9:00 – 12:00 **Gabes Branch Waterfall** – Visit one of the areas small waterfalls with past KSNH Naturalist of the Year and learn about its associated water quality, flora and fauna. Highlights may include a diverse spring wildflower assemblage, salamanders, and neotropical birds.
Drive Time – 30 minutes **Rating – moderate** **Trip Leader – Ben Begley**

9:00 – 12:00 **Small Mammal and Wetland Plant Extravaganza** – Explore the rarely seen small mammal fauna and hydric plants at Pine Mountain Settlement School's wetlands. Participants on this trip will view small mammals (mice, shrews, and voles) live caught in Sherman traps located around the edges of wetlands and learn to identify wetland plants (e.g. sedges, rushes). If weather cooperates, participants may see the short-tailed shrew, white-footed mouse, golden mouse, bog lemming, and hispid cotton rat. This site is the eastern-most location for hispid cotton rat in Kentucky.
Drive Time – N/A **Rating – easy**
Trip Leader – James Kiser

9:00 – 12:00 **Hi-Lewis Barren Nature Preserve** – Visit one of Kentucky's nature preserves, where disturbances (e.g. fire and southern pine beetle outbreak) have sculpted its current condition. This site provides a good view of Black Mountain from Pine Mountain's southern slope. Exposed sandstone glades and oak savannas and associated flora and fauna will be the highlights of this trip. Participants may see eastern prickly-pear (cactus), pink corydalis, and a variety of other xeric species of plants.
Drive Time – 30 minutes **Rating – moderate**
Trip Leader – Zeb Weese

South side of Pine Mountain looking toward Black Mountain, Harlan Co., KY – James Kiser

12:00 – 1:00 **Lunch at Pine Mountain Settlement School**

Afternoon Field Trips

1:00 – 5:00 **Little Shepherd Trail Carpool/Sand Lake Area** -This single lane gravel/paved road extends along the crest of Pine Mountain from US 421 (Harlan) to US 119 (Whitesburg). We will be traveling along the section from Shell Gap to Kingdom Come State Park and taking short hikes into habitats used by state listed small mammals, scenic overlooks, and sandstone cliffs. The Sand Lake area is located on the dry southern slope of the Mountains and is surrounded by a community dominated by members of the Heath family. Nature lovers on this trip will see and learn about several natural communities. Highlights will include a diverse spring flora, including pink lady-slippers, and possibly a rare club moss.
Drive Time – 30 minutes **Rating – moderate/strenuous** **Trip Leader – Ben Begley**

1:00 – 5:00 **Cawood Branch Salamander & Spring Wildflower Trip** – This excursion will focus on salamanders and spring wildflowers along a small mountainous stream. This high quality stream will provide participants an opportunity to observe three species of dusky salamander and southern two-lined salamanders. The adjacent shale cliffs provides habitat for the long-tail salamander, green salamander, and seal salamander. The mesic slopes and floodplain contains numerous spring flowering wildflowers. Highlights may include as many as 10 species of amphibians and more than two dozen species of spring wildflowers.
Drive Time – 30 minutes **Rating – easy** **Trip Leader – James Kiser**

6:00 **Supper at Pine Mountain Settlement School**

7:30 Evening Program Starts:

Welcome and Introductions – Joe Settles

Review of Saturday Field Trips – Moderator – James Kiser

Children's Program Awards – Jeff Foster

Featured Presentation #1 – "WHITE NOSE SYNDROME: ITS AFFECTS ON NORTH AMERICAN BATS" – **Joe Settles**

Featured Presentation #2 – "UNIQUE NATURAL AREAS OF KENTUCKY" – **Marc Evans**

Photography Competition & Awards – Chris Bidwell

General Topics – Open to All

Door Prizes – Cherry Baker

9:30 – 11:00 Salamander Forray on Campus – Bring your flashlights and enjoy the diverse salamander fauna inhabiting Pine Mountain Settlement School's forest floor and streams. Participants may see the large semi-aquatic salamander [Black Mountain salamander (*Desmognathus welteri*)] that was described and named by legendary Kentucky naturalist, Roger Barbour, or the Cumberland Plateau salamander (*Plethodon kentucki*) that was split from northern slimy salamander (*P. glutinosus*) and resurrected into a species by John MacGregor and Dick Heighton. Results of this trip are weather dependent, but highlights may include as many as 11 species of amphibians.
Drive Time – N/A **Rating – easy**
Trip Leader – James Kiser

Plethodon kentucki **Mittleman, 1951 (Cumberland Plateau salamander) - Harlan Co., KY – James Kiser**

SUNDAY, APRIL 26, 2009

7:00 Board Meeting in Laurel House – All board members are encouraged to attend (Working Breakfast)

8:00 Breakfast at Pine Mountain Settlement School

9:00 – 12:00 Pine Mountain Settlement School's Railroad/Dogwood Trail – Numerous trails on campus offer outstanding natural experiences, but botanically (plant lovers) this trail is probably the most diverse. Participants will see a variety of spring wildflowers on this trip, and may get a glimpse at a beaver, shore birds, or water fowl in the large beaver pond complex.
Drive Time – N/A **Rating – moderate**
Trip Leader – Ben Begley

Peromyscus maniculatus nubiterrae **- Rhoads, 1896 (cloudland deermouse) – Harlan Co., KY - James Kiser**

9:00 – 12:00 Small Mammal and Wetland Plant Extravaganza – Explore the rarely seen small mammal fauna and hydric plants at Pine Mountain Settlement School's wetlands. Participants on this trip will view small mammals (mice, shrews, and voles) live caught in Sherman Traps located around the edges of wetlands and learn to identify wetland plants (e.g. sedges, rushes). If weather cooperates, participants may see the short-tailed shrew, white-footed mouse, golden mouse, bog lemming, and hispid cotton rat. This site is the eastern most location for hispid cotton rat in Kentucky.

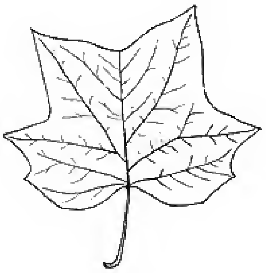
Drive Time – N/A **Rating – easy** **Trip Leader – James Kiser**

9:00 – 12:00 Pine Mountain Settlement School Tours & Hikes – Explore the campus of this historic boarding house and learn about past and present uses of the facility. Numerous buildings contain antique equipment and furniture which is still being used to educate children.

Drive Time – N/A **Rating – easy/moderate** **Trip Leader – Pat Begley**

The Kentucky Society of Natural History would like to thank the following field trip leaders/speakers and their respective employers.

Ben Begley	**Pine Mountain Settlement School**
Pat Begley	**Pine Mountain Settlement School**
Marc Evans	**KY State Nature Preserves Commission (Retired)**
Joseph Johnson	**UK Department of Forestry/Stantec**
James Kiser	**Stantec Consulting Services**
Kyle Napier	**KY State Nature Preserves Commission**
Joe Settles	**East Kentucky Power Cooperative**
Anna Thomas	**University of Kentucky - Department of Entomology**
Zeb Weese	**KY State Nature Preserves Commission**



Thanks for attending Kentucky Society of Natural History's 2009 Spring Conference and mark your calendars for the 2009 Fall Conference at Reelfoot Lake on October 8 – 11, 2009.

ANNOUNCEMENT: KSNH 2008 FALL MEETING AT REELFOOT LAKE - OCTOBER 8-11, 2009

by W. H. (Wally) Roberts

This will be KSNH's first conference at Reelfoot Lake State Park and is in response to membership demand. The earthquake history, location near the Mississippi River, long-growing season, and cypress swamps make this area a very unique conference location. Fall waterfowl and eagle migration will be underway, early fall colors will be appearing, while fall wildflowers will still be in bloom, and Reelfoot's large herp population will still be active.

Please mark your calendars for this extended conference weekend and watch for package pricing in upcoming newsletters. Reelfoot is definitely a naturalist's paradise.

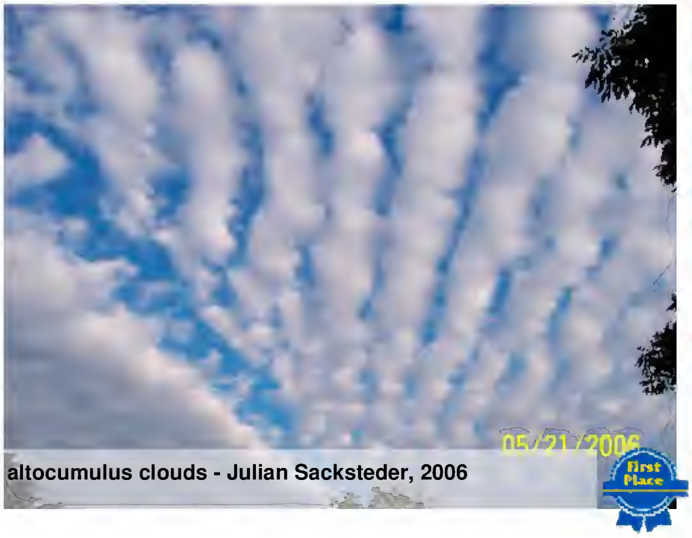
CHAPTER NEWS

Falls of the Ohio Chapter News (see front cover for regular meeting times and place, field trip times may be found below or are to be determined. Contact Chris Bidwell for more information.

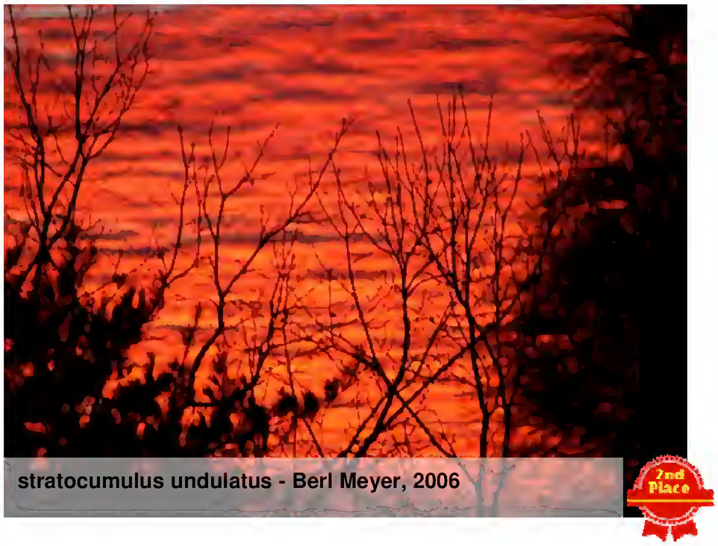
2009 Dates	Event/Speaker	Topic / Outing	Photo Contest Topic
March 19	Meeting: Ed Triner	Galapagos Islands	KYANA Streams
March 21	Field Trip: Dr. William Pearson	Cave trip to the Louisville Grotto's Lone Star Reserve. Meet at the Louisville Nature Center at 9:00 AM.	
April 16	Meeting: Dr. Keith Mountain	Glaciers and Global Warming	Art Forms in Nature
April 18	Field Trip: Larry Hilton	Floyds Fork Tour – TBD	
May 21	Meeting: Major Waltman	Olmstead Parks	Snails
May 23	Field Trip: TBD	Car Tour of the Olmstead Parks	
June 18	Meeting: Larry Melcher	Purple Martin Restoration Project	Guess What This Is in Nature
June 20	Field Trip: Robert Bridges	Purple Martin Site Outing & Picnic @ Bernheim Arboretum & Research Forest	
July 16	Annual Picnic: Kurt Mason	Soil Conservation	none
September 17	Meeting: Dr. Mark Wourms	Tentative Topic: Bernheim Forest	Moths & Butterflies
September 19	Field Trip: TBD	TBD	

October 15	Meeting: Dr. Art Parola	Stream Restoration	Halloween's Patterns & Colors in Nature
October 17	Field Trip: Carl Suk	Jefferson County Memorial Forest & Non-Native Invasive Plants	
November 19	Meeting: TBD	TBD	A Fall Leaf (single leaf)
November 21	Field Trip: TBD	Muscatatuck National Wildlife Refuge	
December 17	Annual Dinner:	TBD	none

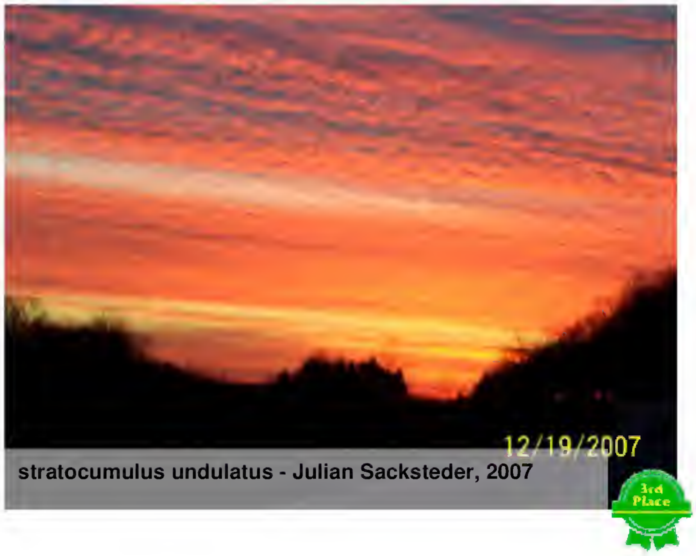
SPRING 2009 NEWSLETTER PHOTO CONTEST – THE TOPIC IS CLOUDS



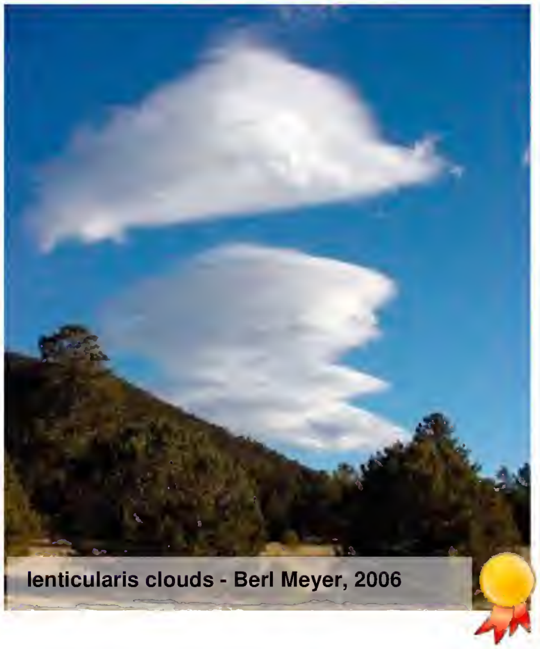
altocumulus clouds - Julian Sacksteder, 2006

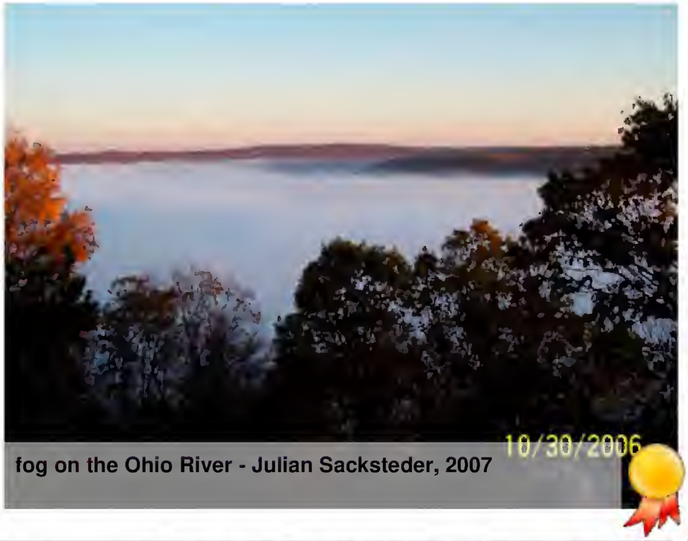


stratocumulus undulatus - Berl Meyer, 2006



stratocumulus undulatus - Julian Sacksteder, 2007


lenticularis clouds - Berl Meyer, 2006



fog on the Ohio River - Julian Sacksteder, 2007

cumulonimbus cloud - Berl Meyer, 2007

stratocumulus mamma clouds - Barry Nichols, 2006

stratocumulus mamma clouds - Barry Nichols, 2006

The Spring 2009 Newsletter Photo Contest had 17 judges.

Newsletter Photo Contest Topics for 2009+:

Summer 2009 - Kentucky Amphibians and/or Reptiles

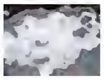
Fall 2009 – Fall Color

Winter 2009 – Kentucky Winter Bird Residents

Spring 2010 – Fungi

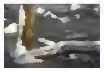
KNN Winter 2008 Photo Contest Results:
Topic was “snow”. There were 31 judges.

1st Place: “G” - Barry Nichols



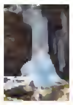
2nd Place: “A” – Chris Bidwell

3rd Place: “F” - Susan Wilson



Hon. Mention: “B” - Susan Wilson

Hon. Mention: “C” – Chris Bidwell



Hon. Mention: “D” - Barry Nichols

Mary Jane Glauber

KSNH FIELD TRIP: ODONATES AT HORNER WILDLIFE SANCTUARY IN OLDHAM COUNTY, JUNE 6, 2009

By Paul Florence

On June 6, 2009, there will be a KSNH Odonate Field Trip to Horner Wildlife Sanctuary in Oldham County. Paul Florence will lead a field trip focusing on the variety and biology of local damselflies and dragonflies. Topics covered will include how to tell the difference between damselflies and dragonflies, habitats and the different life stages that can be found in them, food sources utilized by the different life stages, and identification of local species. Details will be arranged later. Parking & attendance will likely be limited. Contact Paul at paul.florence@kctcs.edu or by phone at (502) 499-2714 to reserve a spot.

KENTUCKY NATURALISTS' CALENDAR

(added as space and time allow)

2009:

March 20-21, 2009: Indiana's Natural Heritage: A Public Conversation, Indiana State Museum, White River State Park, Indianapolis, Indiana. This conference is part of a multi-year project that has resulted in the WFYI (Indianapolis Public Television) award-winning four-part documentary **The Natural Heritage of Indiana**. Learn about science, the environment, sustainable living and more. Pre-conference registration deadline is March 14. More about the project, the conference, and conference registration is available at their website at http://www.naturalheritageofindiana.org.

March 21, 2009: Signs of Spring @ Floracliff Nature Sanctuary, P.O. Box 4006, Lexington, KY 40544. Join us on this hike to Elk Lick Creek for a chance to see the first wildflowers of spring. It should a great time to catch trout lilies and bloodroot in bloom. For more information contact Floracliff Nature Sanctuary by phone at (859) 351-7770, via email at floracliff@aol.com, or check the website at http://www.floracliff.org.

March 28, 2009: Pollinators with Blake Newton @ Floracliff Nature Sanctuary, P.O. Box 4006, Lexington, KY 40544. Join Blake Newton, UK Extension Specialist for 4H and Youth Entomology, for a program about pollinators and their relationships with the spring wildflowers. For more information contact Floracliff Nature Sanctuary by phone at (859) 351-7770, via email at floracliff@aol.com, or check the website at http://www.floracliff.org.

March 28, 2009: Walk in the Park- Iroquois Park Birding Expedition @ Jacob's Lodge in Iroquois Park (9:00am to 12:00pm). Olmsted Parks Conservancy invites you to grab your binoculars and take a walk with Barbara Woerner, Beckham Bird Club member! You will be guided through the hilltop prairie to look and listen for our avian friends celebrating the coming of spring. Donations gladly accepted. Easy to moderate hike. Contact Volunteer and Outreach Coordinator Sara Wolff via email at sarah.wolff@olmstedparks.org, by phone at Phone: 502-456-1623 or on the Olmstead Conservancy website at http://www.olmstedparks.org/.

April 1, 2009: Mid-week Wildflower Hike @ Floracliff Nature Sanctuary, P.O. Box 4006, Lexington, KY 40544. This hike will provide an opportunity to catch the spring wildflowers for those with some free time during the week. For more information contact Floracliff Nature Sanctuary by phone at (859) 351-7770, via email at floracliff@aol.com, or check the website at http://www.floracliff.org.

April 3, 2009: 9th Annual Ohio Botanical Symposium @ Villa Milano (villamilano.com), 1630 Schrock Road Columbus, Ohio, 43229. Symposium is sponsored by Ohio Division of Natural Areas & Preserves (DNAP), The Cleveland Museum of Natural History, The Nature Conservancy, and the Ohio State University Herbarium. Award-winning and world-renowned botanist and conservationist Dr. W. Hardy Eshbaugh will give our keynote address, "The Challenges to Biodiversity Conservation in the 21st Century: Where does Ohio fit in the Equation?" There will be additional talks, posters, vendors, and exhibits from non-profit environmental and conservation groups, park districts, federal and state agencies, and universities. For more information see the Natural Areas & Preserves website at http://www.ohiodnr.com/tabid/20259/Default.aspx or call them at (614) 265-6453.

April 4, 2009: The 2009 Annual Meeting of the Kentucky Bluebird Society @ Shakertown, KY (near Harrodsburg). More info to come. See their website at http://www.biology.eku.edu/kbs/.

April 4, 2009: Medicinal Wildflowers with Ciara Lockstadt @ Floracliff Nature Sanctuary, P.O. Box 4006, Lexington, KY 40544. Experience the spring wildflowers of the Inner Bluegrass during this hike. The hike is focused on the historical and present day medicinal and useful traits of plants. For more information contact Floracliff Nature Sanctuary by phone at (859) 351-7770, via email at floracliff@aol.com, or check the website at http://www.floracliff.org.

April 4, 2009: Wildflower Extravaganza @ John James Audubon State Park, 3100 US 41 North, Henderson, KY 42420. Join us for three leisurely hikes to see the vibrant forest flora as well as participate in programs for all ages. We'll also learn about "problem" plants and how they affect the native plant species during an outdoor invasive species removal. Contact Julie McDonald at (270) 826-2247 or by email at juliea.mcdonald@ky.gov, or visit the park website at http://parks.ky.gov/findparks/recparks/au/ for more.

April 10-12 or April 17-19, 2009: The Society of Kentucky Lepidopterists (SKL) Spring Field Trip @ Somerset, KY. For details see the SKL website at http://bioweb.wku.edu/faculty/Marcus/KYLeps.html or contact trip leader Loran Gibson via email at kymothman@fuse.net, or call President Bill Black

April 17-19, 2009: Wildflower Weekend @ Natural Bridge State Resort Park, 2135 Natural Bridge Road, Slade, KY 40376-9701. The park area is home to hundreds of native plant species; enjoy them this weekend with other botanists, gardeners, and nature lovers. Our field trips are for all levels of participation, and from short, easy walks to longer hikes at Natural Bridge State Park and the Red River Gorge National Geologic Area! Evening speakers will focus on the native plants in the region. Registration fee upon arrival. For more information, contact park naturalist Brian Gasdorf at brian.gasdorf@ky.gov or call 1-800-325-1710, ext 2104. Call the park at (606) 663-2214 or visit their website at http://parks.ky.gov/findparks/resortparks/nb/ for details.

April 17-19, 2009: Wildflower Weekend @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. For over thirty years, Pine Mountain Settlement School has invited the public to enjoy the impressive display of spring wildflowers found on its campus on the north side of Pine Mountain and at other special natural areas close by. You'll enjoy hikes to see wildflowers and other spring phenomenon, interesting evening presentations on natural or cultural topics, great meals and the comradeship of others interested in nature! Fee based. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

April 24-26, 2009: Kentucky Society of Natural History (KSNH) 2009 Spring Meeting @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

April 24-26, 2009: Kentucky Ornithological Society (KOS) Annual Spring Meeting @ Mammoth Cave National Park. The featured speaker for the weekend will be Ted Floyd (http://www.aba.org/birding/editor.html) who is editor of Birding, the primary publication of the American Birding Association. For more information contact KOS at P.O. Box 463, Burlington, KY 41005 or via their website at http://www.biology.eku.edu/kos/default.htm.

May 1-2, 2009: Herpetology Weekend @ Natural Bridge State Resort Park, 2135 Natural Bridge Road, Slade, KY 40376-9701. Discover nature's most misunderstood critters! Experienced herpetologists will lead field trips into the Red River Gorge National Geologic Area to observe reptiles and amphibians in their native habitat. Most Saturday fieldtrips will be offered at 9 a.m. and 1:30 p.m. Collection is prohibited. Friday and Saturday evening presentations will focus on reptile and amphibian natural history and conservation. Some demonstrations will include live venomous snakes! Registration fee upon arrival. For more information contact park naturalist Brian Gasdorf at brian.gasdorf@ky.gov or call 1-800-325-1710, ext. 2104. Call the park at (606) 663-2214 or visit their website at http://parks.ky.gov/findparks/resortparks/nb/ for details.

May 1-3, 2009: Ohio Valley Birding Festival @ John James Audubon State Park, 3100 US 41 North, Henderson, KY 42420. Join birders and educators from throughout the region at the Tri-State Bird Festival. Learn about birds, birding, and bird habitat through seminars, workshops, hikes and crafts. All ages. This festival is sponsored by Audubon State Park, Wesselman Nature Society, Evansville Audubon Society, and Evansville Wild Birds Unlimited. Contact Julie McDonald at (270) 826-2247 or by email at juliea.mcdonald@ky.gov, or Susan Haislip at (812) 479-0771 (ext 100). or visit the festival website at http://www.ohiovalleybirdingfestival.org for more.

May 1-3, 2009: Black Mountain Weekend @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. Wildflower lovers will enjoy visiting Black Mountain where wildflowers are abundant and some Kentucky wildflowers are only found there, such as the painted trillium. As with the Wildflower Weekend, you'll have the opportunity to appreciate spring in the mountains, enjoy presentations by experts in natural and cultural topics, eat good food, and visit with other folks who love nature! Fee based. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

May 1-3, 2009: Flora-Quest '09 - Shawnee and the Edge @ at the Shawnee State Park resort, Shawnee Lodge and Conference Center, 4404 State Route 125, Portsmouth, Ohio 45663-9003. Flora-Quest is a hand's-on learning adventure focusing on wild plants centered at the 65,000-acre Shawnee State Park, Ohio's largest contiguous forest. Just to the west of Shawnee State forest is the sprawling Edge of Appalachia preserve, filled with unusual habitats and possessing one of the state's highest concentrations of rare plants. For more information call (800) 282-7275 or go to the website at http://www.flora-quest.com.

June 2-16, 2009: Junior Naturalist Programs @ John James Audubon State Park, 3100 US 41 North, Henderson, KY 42420.
June 2, 2009; 9:00 a.m.-12:00 p.m. Junior Naturalist Programs Ages 10-12; Audubon Museum
June 9, 2009; 9:00 a.m.-12:00 p.m. Ages 8-9; Audubon Museum
June 16, 2009; 9:00 a.m.-12:00 p.m. Ages 6-7; Audubon Museum
June 16, 2009; 7:00 p.m. S'mores Celebration and Awards Ceremony for all Junior Naturalists and their families (Audubon Campground Shelter).
Open your eyes to the amazing wonders in your own back yard. Learn about how we protect these beautiful resources. Programs meet at the Audubon Museum. Kids who attend any one of these dates will receive a patch and certificate. Children ages 10-12 will meet on June 2, Children ages 8-9 will meet on June 9. Children ages 6-7 will meet on June 16. Pre-registration is required. Maximum 20 attendees per date. Contact Julie McDonald at (270) 826-2247 or by email at juliea.mcdonald@ky.gov, or visit the park website at http://parks.ky.gov/findparks/recparks/au/ for more. Program Fee: $10.00

June 6, 2009: KSNH Odonate Field Trip @ Horner Wildlife Sanctuary in Oldham County, Kentucky. KSNH Invertebrate Coordinator Paul Florence will lead a field trip focusing on the variety and biology of local damselflies and dragonflies. Details will be arranged later (check the next newsletter). Parking & attendance will likely be limited. Contact Paul at paul.florence@kctcs.edu or by phone at (502) 499-2714 to reserve a spot.

June 6, 2009: Creatures of the Night Adventure Trek/National Trails Day @ Audubon Museum, John James Audubon State Park, 3100 US 41 North, Henderson, KY 42420 (6:00 p.m. – 9:00 p.m.). Venture out with our Interpretation staff on National Trails Day and discover the mysticism of nighttime creatures. Dress for the weather and bring a flashlight. Contact Julie McDonald at (270) 826-2247 or by email at juliea.mcdonald@ky.gov, or visit the park website at http://parks.ky.gov/findparks/recparks/au/ for more.

June 10-14, 2009: In the Footsteps of Lucy Braun @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. This four-day forest study workshop is named in honor of one of the first and foremost conservationists of the 20th century, E. Lucy Braun. Dr. Lucy, as she was called by her colleagues, devoted her life to the study of plants and to conservation campaigns to save wilderness areas and other natural sites. The four-day workshop will combine field trips, lectures, and slide presentations in the study of forest types found in Eastern Kentucky. Daily field trips will include four- to eight-mile hikes. The workshop is geared toward adults. Fee based. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

June 21-24, 2009: 4th Hellbender Symposium @ Cumberland Falls State Park, in Corbin, Kentucky. More details to follow.

July 24-26, 2009: Midwest Native Plant Conference @ Hope Hotel at Wright-Patterson Air Force Base in Dayton, OH. This event is hosted by the newly formed Midwest Native Plant Society, Flora-Quest and the Greater Cincinnati Wild Ones. This conference will include educational programs and field trips designed to connect people and nature. The focus will be on native prairies and wetlands with emphasis on the importance of native plant communities. For more information see their website at http://cincinnatibirds.com/wildones/MWNP_Society/preregister.php or call (513) 941-6497.

June 27, 2009: The Society of Kentucky Lepidopterists (SKL) Annual 4th of July Oldham County Butterfly Count @ Horner Wildlife Sanctuary. For details see the SKL website at http://bioweb.wku.edu/faculty/Marcus/KYLeps.html or contact trip Leader Charlie Covell via email at covell@louisville.edu.

August 12-16, 2009: In the Footsteps of Lucy Braun @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. This four-day forest study workshop is named in honor of one of the first and foremost conservationists of the 20th century, E. Lucy Braun. Dr. Lucy, as she was called by her colleagues, devoted her life to the study of plants and to conservation campaigns to save wilderness areas and other natural sites. The four-day workshop will combine field trips, lectures, and slide presentations in the study of forest types found in Eastern Kentucky. Daily field trips will include four- to eight-mile hikes. The workshop is geared toward adults. Fee based. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

August 28-30 or September 12-14, 2009: The Society of Kentucky Lepidopterists (SKL) Summer Field Trip @ Jackson Purchase (Western Kentucky). For details see the SKL website at http://bioweb.wku.edu/faculty/Marcus/KYLeps.html or contact trip leader: Gerald Burnett gdburnett@brtc.net.

September 12 & 19, 2009: Monarch Butterfly Migration Mysteries @ Audubon Museum, John James Audubon State Park, 3100 US 41 North, Henderson, KY 42420 (8:00 a.m. and 1:00 p.m. - both days). Bid a farewell to the Monarch Butterflies migrating south for the winter. We will meet at the Audubon Museum for a 45-minute introductory indoor presentation. Next, we will carpool to the Sloughs Wildlife Management Area for some outdoor Monarch tagging. The outdoor portion (2-3 hours) is weather dependent. Please dress for potentially marshy conditions. We will meet at the Audubon Museum for an introduction into these extraordinary insects and carpool to the Sloughs Wildlife Management Area to capture and tag them on their way to Mexico. Tags and nets will be provided. Contact Julie McDonald at (270) 826-2247 or by email at juliea.mcdonald@ky.gov, or visit the park website at http://parks.ky.gov/findparks/recparks/au/ for more. Program Fee: $5.00 per person, Family rate (up to five members, extra members $2.50 each) - $13.00; FOA Members - $4.00 per person

September 17-20, 2009: Midwest Birding Symposium @ Lakeside, OH. This event is hosted by Bird Watcher's Digest, The Ohio Ornithological Society, and the Lakeside Association. For more information see their website at http://www.midwestbirding.org or call (888) 896-6927.

September 18-19, 2009: Kentucky Association for Environmental Education (KAEE) Annual Meeting @ General Butler State Resort Park, 1608 Us Highway 227, Carrollton, KY 41008. The confluence of the Kentucky and Ohio Rivers provides opportunities to figuratively and literally explore this year’s theme, Currents in Environmental Education. For more information, contact Jennifer Adler by phone at (859) 707-7421, or visit the KAEE website at http://kentuckyassociationforenvironmentaleducation.org.

September 25-27, 2009: Kentucky Ornithological Society’s Fall Meeting @ Lake Barkley State Resort Park. For more information contact KOS at P.O. Box 463, Burlington, KY 41005 or via their website at http://www.biology.eku.edu/kos/default.htm.

October 16-18, 2009: Fall Color Weekend @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. Fall Color Weekend at Pine Mountain Settlement School offers activities for people of all ages. Features include hikes, multi-media presentations, and the opportunity to enjoy some of Kentucky's most beautiful natural areas and stunning autumn foliage. Fee based. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

October 18, 2009: 12th Annual Indiana Bluebird Society Meeting @ Quaker Haven Camp, 111 Ems D16c Lane, Syracuse, IN. There will be two featured speakers, Jerry Sweeten, Director of Environmental Studies at Manchester College and Dena Purcell with Wild Birds Unlimited in Fort Wayne, Indiana. Jerry will be speaking about birds native to Indiana and demonstrating the use of mist-netting to show how birds are captured to study and band. Dena will be presenting a program on the basic needs of birds and how to make your garden and yard more enticing to birds. In addition, there will be a panel discussion and question & answer session concerning bluebirds with time to hear from district coordinators with news from their districts. For more information, see the IBS website at http://indianabluebirdsociety.org/ or contact Ted Vesa by phone at 260-248-8636 or via email at tjvesa@embarqmail.com.

November 7, 2009: Fall Foliage Fiesta @ Audubon Museum, John James Audubon State Park, 3100 US 41 North, Henderson, KY 42420 (1:00 p.m. – 2:00 p.m.). How does nature transition from sunny, warm summer days to crisp and wintry conditions? During this PowerPoint presentation, visitors will peek inside nature's bag of seasonal tricks that allow for life to exist in seemingly unbearable conditions. Afterwards, take a walk outside and soak in the colors and sounds of Audubon State Park's most colorful season. Contact Julie McDonald at (270) 826-2247 or by email at juliea.mcdonald@ky.gov, or visit the park website at http://parks.ky.gov/findparks/recparks/au/ for more.

October 8-11, 2009: Kentucky Society of Natural History 2009 Fall Meeting @ Reelfoot Lake. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

Fall 2009: The Society of Kentucky Lepidopterists (SKL) 2009 Annual Meeting @ Entomology Department, University of Kentucky, Lexington, Kentucky. For details see the SKL website at http://bioweb.wku.edu/faculty/Marcus/KYLeps.html.

2010:

April 23-25, 2010: Kentucky Ornithological Society's Fall Meeting. Jenny Wiley State Resort Park. For more information contact the Kentucky Ornithological Society at P.O. Box 463, Burlington, KY 41005, or via their website at http://www.biology.eku.edu/kos/default.htm.

Spring 2010 TBA: Kentucky Society of Natural History 2010 Spring Meeting @ Shawnee State Park, Ohio. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

Fall 2010: Kentucky Ornithological Society's Fall Meeting @ Paducah/Ballard Wildlife Management Area (dates to be announced). For more information contact KOS at P.O. Box 463, Burlington, KY 41005 or via their website at http://www.biology.eku.edu/kos/default.htm.

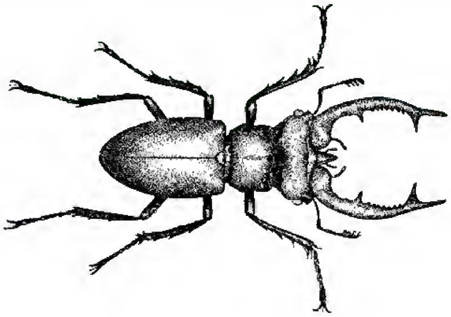
Fall 2010 TBA: Kentucky Society of Natural History 2010 Fall Meeting @ Shakertown National Historic Landmark. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

2011:

April 15-17, 2011: Kentucky Society of Natural History 2009 Spring Meeting @ Carter Caves State Resort Park, 344 Caveland Dr, Olive Hill, KY 41164, [(606) 286-4411]. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

April 29-May 1, 2011: Kentucky Ornithological Society (KOS) Annual Spring Meeting @ Barren River State Resort Park. For more information contact KOS at P.O. Box 463, Burlington, KY 41005 or via their website at http://www.biology.eku.edu/kos/default.htm.

Fall 2011 TBA: Kentucky Society of Natural History 2011 Fall Meeting @ Cumberland Falls State Resort Park. See upcoming newsletter for details or go to the website at http://www.ksnh.org.



"The males have mandibles almost as long as itself, and branched like antlers." - John B. Smith discusses the giant stag beetle, *Lucanus elaphus* Fabricius, 1775 in:

Smith, John B. 1896. Economic Entomology for the Farmer and Fruit Grower, and for Use as a Textbook in Agricultural Schools and Colleges. Philadelphia and London: J.B. Lippincott Co. 481 pages.

The mission of the Kentucky Society of Natural History is to actively promote study and interest in Kentucky's rich natural heritage throughout the Commonwealth. Members are typically interested in a broad spectrum of natural sciences and related fields. Among the more prominent activities of the society, are the annual Spring and Fall Conferences, selection of a "Naturalist of the Year", nature photography contests, and a variety of knowledgeable speakers and field trips. We invite anyone who shares our interests to join us. For membership information or the address of the nearest affiliated chapter, please contact:

KSNH, P.O. Box 72777, Louisville, KY 40272-0777, or visit our website <http://www.ksnh.org> for the membership form. Membership dues are: Individual $15, Family $25, Full Time Student $5, Life: $300.

The Kentucky Society of Natural History is an official 501(c) (3) tax-exempt nonprofit organization which was formed in 1939, and incorporated in 1943 in Louisville, Kentucky. All contributions to THE KENTUCKY SOCIETY OF NATURAL HISTORY are tax-deductible to the full extent of income tax laws.

Published quarterly, The Kentucky Naturalist News is the official newsletter of KSNH. Unsolicited contributions are encouraged. Please send articles to: **Barry Nichols, KNN Editor, P. O. Box 21182, Louisville, KY 40221**. You can also email newsletter submissions by sending them to kyfauna@iglou.com.

Kentucky Naturalist News Deadlines:

Issue	Deadline	Newsletter to be Published
Spring Issue	February 15, 2009	March 7, 2009
Summer Issue	May 1, 2009	June 1, 2009
Fall Issue	August 1, 2009	September 1, 2009
Winter Issue	November 1, 2009	December 1, 2009

For submissions, please cite references. To assist, you may use: http://www.lib.ncsu.edu/lobo2/citationbuilder/citationbuilder.php.

Kentucky Society of Natural History,
P.O. Box 72777,
Louisville, Kentucky 40272-0777.

Formed 1939,
Incorporated 1943

Kentucky Naturalist News

Official Newsletter of the Kentucky Society of Natural History

Volume 67, Number 2, Summer 2009

Website: http://www.ksnh.org

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Pete Glauber (cherokee@ksnh.org)
Herb Zimmerman (via mail)

Affiliated Chapters

Arches of the Cumberland Chapter (Slade) meets informally, call President Dell Sasser for details, 606-666-7521 x73559, or (606) 233-8938, or via email (dell.sasser@kctcs.edu)

Falls of the Ohio Chapter (Louisville) meets every 3rd Thursday of each month except Jan, Jul, Aug, & Dec at 7:00 PM at the Louisville Nature Center, 3745 Illinois Ave, Louisville, 40213. Call President Chris Bidwell at (502) 458-1328, or via email (mabteacher1@yahoo.com).

Wilderness Trail Chapter (Pineville) meets the first Thursday of each month, March through December, at 7:00 p.m., generally at Pine Mountain State Resort Park in the Ray Harm Room, 1050 State Park Road Pineville, KY 40977-0610 (800-325-1712). Call President Tom Toole at (606) 248-3078, or via email (tom.tdtoole@gmail.com).

Lasiurus cinereus **(Palisot de Beauvois, 1796) (hoary bat) - Barry Nichols, 2007**

EDITOR'S NOTES

Early reports from the **KSNH Spring Meeting 2009** speak of a good time had by all. Unfortunately, due to the need for timely articles to be in the hands of members, I had to bump the meeting coverage to the next issue. The upside is that if you have meeting photos, minutes, stories, and/or articles, there is still time to get them into the newsletter. The deadline for next issue (Fall 2009) is August 1, 2009.

This issue contains THREE opportunities to assist in important survey work, namely **Firefly Watch** (Boston's Museum of Science), **The Lost Ladybug Project** (Cornell's Entomology Department) and **The Great Sunflower Project** (San Francisco State University). All three provide simple ways for anyone to make real contributions to biodiversity studies and each allows one to choose how much or how little they can participate.

In the unfortunate news department, researchers at the University of Kentucky **Department of Entomology** **reported in February** that the

hemlock woolly adelgid (see the **Spring 2008 KNN – 66:1** pages 3-7) has spread west to Natural Bridge State Park (Powell County) and Big South Fork (McCreary County). Additionally, researchers in the UK Entomology Department are using widespread trapping in 2009 in **Kentucky** for ***Agrilus planipennis*** Fairmaire, 1888 (**emerald ash borer**) (EAB) because they are **now known** from sites in Shelby and Jessamine Counties. You can click and watch a **multimedia presentation on EAB in Indiana**. I am currently working on an author for a newsletter article on EAB and hope to have more information for you soon.

If there is a topic you'd like to see covered in **KNN**, whether it be a species, habitat, conservation effort, landform, geologic feature, mineral, celestial body, or basically anything related to natural history, please let me know and I'll do my best to find an author to address it. I've had a couple of requests and I'm working on it! Why not send in yours?

As always, please mail any articles, news, photos, etc to **kyfauna@iglou.com** **–ed**

A MESSAGE FROM THE PRESIDENT – SUMMER 2009

by Joe Settles

Greetings everyone! I hope this newsletter finds you in good health and in good spirits. We had a fantastic time at the spring conference at Pine Mountain Settlement School (PMSS). I want to thank all of the wonderful folks at PMSS, especially Ben and Pat, for their gracious hospitality. PMSS is a very special place, and their hard work to showcase all that is Pine Mountain made it even better.

I also want to extend our thanks and praise to all of the field trip leaders and speakers listed below who made the weekend possible:

Ben Begley	**Pine Mountain Settlement School**
Pat Begley	**Pine Mountain Settlement School**
Marc Evans	**KY State Nature Preserves Commission (Retired)**
Joseph Johnson	**UK Department of Forestry/Stantec**
James Kiser	**Stantec Consulting Services**
Kyle Napier	**KY State Nature Preserves Commission**
Anna Thomas	**University of Kentucky - Department of Entomology**

Susan Wilson and Chris Bidwell put together a wonderful slideshow with photos of KSNH events from the past and present. The program was played during breaks in the evening programs, and everyone thoroughly enjoyed the pictures. Please send in any photos you have of people in the field during KSNH outings to Susan Wilson for inclusion in future slide shows.

I especially want to thank James Kiser for all of the hard work he put into rounding up the speakers and field trip leaders for the weekend. He puts a great deal of thought and effort into developing the interesting and informative programs we get to enjoy. His hard work paid off for the membership once again.

Marc Evans' (1988 KSNH Naturalist of the Year) presentation on the "Unique Natural Areas of Kentucky" was especially enjoyable for me. I have been blessed over my career with the opportunity to visit nearly all of the areas he mentioned, and each photo of a rare species or a natural area brings back special memories of those trips. I remembered the first time I saw ***Gentiana puberulenta*** (prairie gentian) and photographed those amazing flowers. The presentation also brought back the feeling of a being like a kid at Christmas when visiting Murphy's pond for the first time and the excitement of finding a red milk snake at **Three Ponds Bluff**.

Those memories and experiences are owed to Marc and his counterparts that have worked so hard over the years protecting and preserving these areas. The take home message from his presentation is with all the hard work that has been done there is even more to do. As a reminder of the biodiversity Kentucky has to offer and needs to preserve, pick up a copy of "**Rare Wildflowers of Kentucky**" by Tom Barnes, Deborah White, and Marc Evans.

The fall meeting will be here before you know it. We will be in western Kentucky/northern Tennessee for this trip to the **Reelfoot** area in early October. We are already working on the conference agenda, and this meeting should have something for everyone from geology to birds to herps and everything in between.

New organizational leaders will be named in October, so please considering volunteering to serve or start thinking of nominees. As always, if you have any questions, comments, or suggestions regarding our organization please do not hesitate to call me at 859-745-9256 or drop me an email at **joe.settles@ekpc.coop**.

I look forward to seeing you in October!

Joe Settles *is the Kentucky Society of Natural History's President for the 2008-2010 term.*

FINDING TINY FRIENDS WITH THE LOST LADYBUG PROJECT

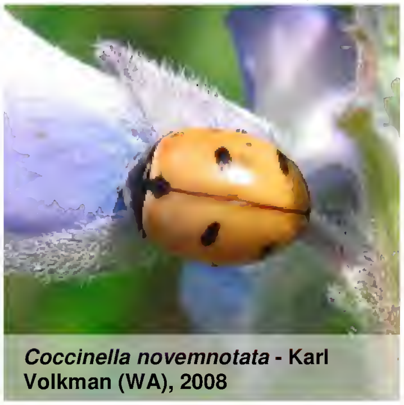
by Rebecca Smyth and Leslie Allee

father & son survey team from the Ladybug Blitz in Ithaca, NY, 2008

In North America, ladybug distribution is changing fast. Of the nearly 500 species of **Coccinellid** beetles found in North America (about 70 that we would all recognize as ladybugs) some have always been rare. But in the last twenty years, several species that once were ubiquitous suddenly disappeared from view. The causes and consequences of this precipitous decline are the inspiration for the **Lost Ladybug Project**, a continent-wide citizen science project based in the **Cornell University Entomology Department**.

survey assistant Katie Stephen (FL), 2008

The Lost Ladybug Project was set in motion in the year 2000 when we coordinated with 4H Cooperative Extension Master Gardeners to help us start surveying ladybug populations across New York State. Afterwards we collaborated with graduate students from the **Cornell Institute for Biology Teachers** to develop ladybug survey projects for children. Field-testing these projects with students at a small number of elementary schools in New York State in began in 2004. One of the first major discoveries came in 2006 when Jilene (age 11) and Jonathan (age 10) Penhale found a rare ***Coccinella novemnotata*** Herbst, 1793 (**nine-spotted ladybug**) near their home in Virginia. They just happened to be in the company of parents of a Cornell entomology student who had heard just one presentation about our project. This was the first ninespotted ladybug seen in the eastern U.S. in 14 years! Their finding confirmed that the species was not yet extinct and that with enough people working together this and other rare ladybug species could be found. With this discovery, and after developing survey methods, a core database, and a beginning children's project, we applied to the **National Science Foundation** (NSF) to expand our activities. We were granted funding by the NSF Informal Science Education program in 2008. Now anyone in North America has the opportunity to join the exciting search for rare species and make a tangible contribution to the conservation of these beautiful and useful creatures.



Coccinella novemnotata **- Karl Volkman (WA), 2008**

At the Lost Ladybug Project we have gone to great lengths to combine scientific accuracy with ease of involvement. All anyone really needs is a camera (preferably digital) and a computer (or not) and a few notes about location, date, and habitat. Tips for finding, collecting, and photographing ladybugs as well as an online submission page can all be found at **www.lostladybug.org**. All submissions must be in the form of photographs and the vast majority of these are digital. When this is impossible people can send hard copy photos through snail mail. Ultimately, every Lost Ladybug data point is permanently linked to a digital image and species identifications are made by trained personnel. This novel protocol will reduce errors in identification and create a virtual collection in which every data point is vouchered.

Harmonia axyridis - Tom Haglund (CA), 2008

Coccinella septempunctata - sevenspotted - Emily Bung (CA),

Ease of participation is also an essential ingredient to another important objective of the Lost Ladybug Project, the inclusion of 5 to12 year olds! With a little help from bigger kids, parents, teachers, and youth leaders, youngsters are fully able to become true citizen scientists. In many ways they find out that they are already scientists! By sending in their pictures and observations they become part of ongoing scientific inquiry and will contribute to discovering where certain ladybugs have gone and why they have gone. At www.lostladybug.org mentors can find organized curriculum for different age groups as well as educational materials ranging from poetry and games, to instructions for making homemade sweep nets. We offer access to the ladybug database of photos and tools to visualize and understand the data, including maps and mapping tools. We also devote outreach efforts to include youth from Native American, rural, farming, migrant or low-income communities. Early feedback from groups working with the Lost Ladybug Project revealed an impact in changing attitudes by showing that 1) ladybugs (and other insect groups) are beneficial, 2) ladybugs are a very diverse group, 3) this diversity is declining, and 4) everyone can help preserve ladybug diversity by participating in the program. We know that a single positive experience at this age can greatly enhance the potential that a child will maintain a lifelong interest in science and the diversity of life.

Adalia bipunctata - Denis Doucet (NB), 2009

Not only is this a fun way to convey concepts of biodiversity and conservation but children are perfectly suited to be some of our very best data collectors! It's a two-way street. Of course kids have keen eyesight and talent for finding small critters like ladybugs. Yet they also can be excited about every single ladybug they see. This is ideal rather than just searching for novelty. But for the Lost Ladybug Project to have a reasonably accurate understandings of relative abundance and distribution we need a picture of every individual ladybug that is found. Simply put, and mathematically speaking, in order to know how rare the rare species are we need to know how common the common species are.

Two large introduced ladybugs dominate the North American landscape right now: the multicolored ***Harmonia axyridis*** (Pallas, 1773) (**multicolored Asian ladybug**) and ***Coccinella septempunctata*** (Linnaeus, 1758) (**sevenspotted ladybug**). Multicolored Asian ladybugs were introduced several times in the last century, primarily from Japan, for biological control of aphids. Though now many people consider them a nuisance when they are found in large numbers over wintering in homes, for farmers they are still beneficial. Sevenspotted ladybugs were introduced from Europe and became established in North America in the 1970's, also for aphid management. One of the most intriguing aspects of the rarity of the ninespotted, twospotted, and transverse ladybugs is that until three decades ago they were among the most common ladybugs in North America. The **ninespotted ladybug** was so common and so rightfully revered for its role in the suppression of pest populations that it was named the State Insect of New York in 1985. Dominance by the exotic species may not persist indefinitely, and competitive displacement is only one possible cause of native population decline. Habitat loss, disease, and even hybridization could also play roles.

Coccinella transversoguttata - Benjamin Losey (SD), 2008

The good news is that even the rarest of North American ladybugs could turn up in anyone's backyard! A very special lure of the Lost Ladybug Project is the real possibility of finding a rare beetle. The search for rare species is normally almost exclusively the realm of trained scientists. Few of us as naturalists have had the opportunity to experience the thrill of searching for a truly rare creature. We don't have the means and equipment to climb the rocky cliffs of south Asia to see a snow leopard or penetrate the swamps of Arkansas to search for ***Campephilus principalis*** (Linnaeus, 1758) (the **ivory billed woodpecker**). So far, with over 1100 ladybug submissions, 24 of the rarest species have turned up in the Lost Ladybug Project! Two more ninespotted ladybugs (*Coccinella novemnotata*), one from Nebraska and another from northern Washington State; 14 ***Adalia bipunctata*** (Linnaeus, 1758) (**two-spotted ladybugs**) from a wide variety of geographic locations; and 8 ***Coccinella transversoguttata*** Faldermann, 1835 (**transverse ladybugs**) all from Wyoming, South Dakota, Nebraska, and Colorado. These results represent more individuals of these rare species then have been reported in technical publications for the last 20 years. Still, for conservation efforts to take hold, we need many more. The Lost Ladybug Project is just beginning.

[Ed. Note: Go to the National Public Radio website for a 10-minute **audio on the Lost Ladybug Project** and **Audubon Magazine for a short video.]**

Rebecca Rice Smyth *shares outreach and curriculum development for the* ***Lost Ladybug Project*** *with Leslie as well as handling data management and website development. Her background includes both research in Latin America and inquiry-based curriculum development for middle school biology students and she combines these skills to promote participation in the LLP among children in migrant worker families in New York State. She holds a PhD in Entomology from Cornell University (2002) and has been studying chrysomelid leaf beetle / plant interactions since 1998.*

Leslie Ladd Allee *is a co-founder of the* ***Lost Ladybug Project*** *and currently contributes to curriculum development and outreach to youth in underserved communities. She holds a PhD in Entomology from Cornell University (2001) and has focused her research on alternatives to insecticides, primarily in corn. The LLP gives her a way to combine her beetle expertise with her passion for outdoor play.*

Sex, Lies, and Fireflies

by Don Salvatore

Photinus sp Don Salvatore, 2008

There is nothing more peaceful than standing in a meadow on a July night, watching the stars twinkling above and the fireflies twinkling below. Nothing more peaceful to me, that is. Not so to the **fireflies**. For the fireflies, serious business is afoot---business fraught with danger.

Fireflies are not flies, as their name would imply. Despite being called lightning bugs and glowworms, they aren't bugs, or worms either. They are beetles. And most of them are creatures of the night (some fireflies have evolved daytime habits and do not flash). As such, all their business must be carried out in the dark. This presents a problem when it comes time to find a mate. If it is dark, how do you locate one? Nocturnal insects have solved this problem in different ways. Crickets and grasshoppers find their mates by their song. Moths use a type of perfume, called pheromone, to attract their mate. Mosquitoes rely on the buzzing of their wings. Fireflies attract mates with their flashing lights. Since there are about 200 types of fireflies in North America and any firefly meadow may be home to many species, the **light is their language**, allowing them to distinguish their species from all others. The language is in the flash pattern. The flashes may differ in color, numbers of flashes, duration of each flash, and length of time between the flashes.

Photinus **sp. - Don Salvatore, 2008**

For instance, the flash of the male ***Photinus pyralis*** is light green. Each flash lasts about 0.5 seconds and is repeated every 6 seconds. The female will reply with a 0.5 second flash about 3 seconds after one of the male's flash.

The flash of the male ***Photinus marginellus*** is also light green, but is 0.3 seconds in duration, and is repeated every 3 seconds. The female responds about 0.4 seconds after the male flash with a 0.2 second long flash. These differences are enough to allow each species of firefly to identify their own kind.

With a little practice, you too can **learn the language of fireflies**.

Typically, it is the male fireflies that are flying. They will patrol an area, flashing their pattern and hope that they entice a female to respond. The females are sitting, perched on a shrub or in the grass, waiting for a male that appeals to her. She can afford to be choosy, since often there are many more males than females. If a particular male doesn't excite her, she only has to remain unlit. He can't find her in the dark. Only when she flashes the correct pattern in response to his flash will he be alerted to her presence and receptivity to mate. Now he must not waste any time approaching her because once she reveals her presence, other males in the vicinity will know where she is and may beat him to the prize.

***Photinus* sp. - Don Salvatore, 2008**

There are some studies that show female fireflies are using the flash of the male to choose the best possible mate. When fireflies mate, the male transfers a protein rich **spermatophore** to the female. The spermatophore contains both a mass of protein and sperm. The protein is used to nourish the developing eggs. Adult fireflies don't feed, making this spermatophore critical for egg development. Therefore, it is advantageous to choose a male with a large spermatophore. In some species of fireflies, spermatophore size has been correlated with certain characteristics of the male flash. Therefore the female firefly can choose which male she wishes to mate with.

***Pyractomena* sp. - Don Salvatore, 2008**

The flash of the firefly serves another purpose other than mating. It announces their whereabouts to predators. Seemingly, these slow flying insects would be easy targets for bats, spiders, toads and a host of other nighttime predators. However, most predators leave them alone. The fireflies have **noxious chemicals** in their blood. The chemicals are called **lucibufagins** because they are related to the chemicals in the parotid glands of toads in the genus ***Bufo***. When threatened, the fireflies will extrude blood from their joints – a process called "**reflex bleeding**". This noxious blood is enough to deter many predators. So it is to the firefly's advantage to announce his presence and not be mistaken for some tastier night-flying insect.

So far, life would seem ideal for the fireflies. They fly around at night **looking for mates**, secure that most predators will let them be. Their biggest concern is getting to a receptive female before some competitor beats him to her. But of course, nothing in life is ever that simple.

***Photuris* sp. - Don Salvatore, 2008**

In North America, there are three genera, or main groups of fireflies, ***Photinus***, ***Pyractomena*** and ***Photuris***. Each genus (singular of genera) contains a number of species, with the *Photinus* the most numerous, and best-studied group. Both *Photinus* and *Pyractomena* measure about a half-inch long. *Photuris* is about two to three times as large. As stated above, each species has its own distinctive flash pattern to prevent confusion. However, *Photuris* fireflies can not only flash the *Photuris* pattern, they can also imitate a number of female *Photinus* fireflies, some *Photuris* being able to imitate over 10 different *Photinus* flash patterns.

After the female *Photuris* has mated, she starts imitating the flash pattern of one of the *Photinus* females that are present in her meadow. When a male *Photinus* sees this flash, he thinks he has found a receptive female. He approaches her with mating on his mind. However, when he arrives, she grabs him and eats him. Not quite what he expected.

***Photuris* sp. larva - Don Salvatore, 2008**

Like all other living organisms, the urge to mate is huge in fireflies. And time is short. Adult fireflies only live a week or two. Coupled with the competition from other males, the chances to mate may be few and far between. So a male has a choice. Does he rush headlong to the female, trying to arrive before the competition and take a chance that he is, in fact, approaching a female *Photinus* and won't get eaten, or does he take his time to make sure he is not approaching a *Photuris* imposter and hope some other less cautious male doesn't beat him to a receptive *Photinus*?

Not all female fireflies sit patiently on the ground waiting for a male to approach. Sometimes a *Photuris* female will locate a flying male *Photinus* and attack him in the air. This technique is called "**aerial hawking**". A male *Photuris* may use this to his advantage, to find a mate of his own. He may imitate the male *Photinus*, stimulating an attack by a female *Photuris*. When she approaches, he grabs her and mates with her. This, however can be a risky business since the female is intent on eating, not mating.

Feeding on the *Photinus* fireflies serves two purposes for the *Photuris* fireflies. First, they are a source of nourishment. But they also supply a source of the toxic **lucibufagins** that protect the *Photinus*. The *Photuris* fireflies don't manufacture these chemicals for themselves. They acquire them only through predation. Once they have acquired them, however, they are passed on to the eggs and larva of the *Photuris*, thus affording them the protection that the mother can not produce herself.

To us humans, all may seem peaceful in the evening meadow. But for the firefly, it is night full of sex and lies.

Don Salvatore is a science educator at the ***Museum of Science in Boston****. He is the coordinator of the* ***Firefly Watch*** *citizen science project. More nature stories by Mr. Salvatore can be found on his* ***Backyard Biology*** *web site.*

FIREFLY WATCH CITIZEN SCIENCE PROJECT

by Don Salvatore

"Do you have many fireflies in your neighborhood? "

Adam South, a graduate student studying fireflies at **Tufts University** just outside of Boston, asked me that question when he heard that I lived only a few miles from the coast. The question surprised me. I expected that someone studying fireflies would know where they occurred. After all, if you asked someone studying butterflies if the **great spangled fritillary** could be found in the **Daniel Boone National Forest** in Kentucky, you would expect them to know. But it turns out there is a lot that is not known about fireflies. So Adam and I decided to do something about it.

***Photinus* sp. - Don Salvatore, 2008**

I am a science educator at the **Museum of Science** in Boston. One of the main goals of the museum is to foster an interest in science and demonstrate how science works. Therefore, it seemed natural that the museum would be interested in **citizen science projects** – enlisting volunteers to help collect relevant data for scientific research. So, with the help of staff at the museum and two other firefly scientists, the **Firefly Watch** citizen science project was designed and launched last March.

Since this was our first venture into the world of citizen science and since we were working on a very limited budget, we thought it would be smart to start off small, learning as we go. So word of the project was distributed only to watershed organizations and bird clubs in Massachusetts. We expected about a hundred people to participate, with the numbers growing each year as we gained experience in running a citizen science project. What we totally underestimated was the power of the firefly. People who signed up for the project told their family and friends across the country. The story got picked up by a number of local and national news media. By the end of the summer, 1,400 people had signed up to participate – covering 36 states (just about every state with flashing fireflies) and 4 other countries. It seems that many people are concerned with the plight of fireflies and are willing to invest some of their time to help these amazing creatures.

The Firefly Watch citizen science project was designed with three goals in mind:

1. gathering scientifically relevant data for firefly researchers,
2. make people aware that choices they make can have an impact on the environment,
3. teach them some of the natural history of the firefly.

1. Scientists have believed for many years that firefly numbers are dwindling. However, as any good scientist will tell you, beliefs are not enough. What is needed is data that supports these beliefs. A good example of this is the data that exists on bird numbers. The **National Audubon Society** and other groups have been conducting bird censuses for over a hundred years. By comparing the data collected recently to that collected in the past, it is known which bird species are declining and which are increasing in numbers. No such data exists for fireflies. Hopefully, our Firefly Watch project will provide the data that scientists need to evaluate the health of firefly populations. Some of the questions we hope to answer are: Are fireflies disappearing from the landscape? What is the firefly season in different parts of the country? Is global warming having an effect? What types of habitats do fireflies prefer? What human actions are having an effect on fireflies? What can be done to help preserve firefly populations? To answer these questions will take many years of data input. We will need to recruit many more than the 1,400 volunteers we now have. And we will need to keep our volunteers committed to the project for the long haul. We have a long way to go before we can begin to understand what is happening with the firefly, but at least we have made a start.

Pesticide application warning sign - Don Salvatore, 2008

2. It seems that everyone I talk to about fireflies is concerned about them. They ask, “I used to see loads of fireflies as a kid. I haven’t seen them for years. What has happened to them?” While we can’t say for sure why fireflies are disappearing, or even if they are, until we collect enough data, I find it instructive to ask a few questions. “Have you removed all of the shrubbery from your yard? How often do you mow? Do you apply pesticides, weed killers or fertilizers to your yard? Do you keep the outside lights on during the night?” These are questions we ask in the firefly survey. While we don’t have the data yet to support the thought that any of these actually affect fireflies, by just asking these questions, we are raising people’s awareness that their actions may have an effect on the environment: that they may be – in some very small way – contributors to the decline of fireflies. And, of course, if fireflies are in decline, it is safe to assume that many other species are in decline as well.

3. Mention the word “firefly” to people and invariably you see a smile spread across their face. They are obviously remembering some warm summer nights of their childhood, running around with a net while collecting fireflies. Most everyone I talk to has these memories. Most everyone I talk to list fireflies as their favorite insect. So it is surprising to me that there are no good popular science books on fireflies. Most people know little to nothing about these fascinating creatures. The Firefly Watch web site contains a lot of information on their natural history. As people participate in the Firefly Watch citizen science project, they see the firefly as more than just the magical blinking lights that enchanted their childhood. Their appreciation for these insects takes on a whole new dimension.

If you would like to be a Firefly Watcher and help scientists gather information for their research, and at the same time learn more about fireflies, check out the Firefly Watch website at **www.mos.org/fireflywatch**. Upon registration, participants are asked to fill out a questionnaire describing their habitat. Then, once a week, they count the number of fireflies they see in a ten second period, record the weather conditions and send us the data.

I would like to acknowledge the other participants in the Firefly Watch project:

Maureen McConnell - Past exhibit designer at the museum and citizen scientist
Emily Bottis, Kate Cohen, Shai Herman, Kim Lapan, Mike Egan, Tomio Ueda – the museum Web Team
Kristian Demary, Ph.D. – Adjunct Professor at Boston College
Christopher Cratsley, Ph.D. – Professor at Fitchburg State College

[For more on Don and fireflies, visit the weekly environmental radio show Living on Earth's website. There is an article and podcast entitled "Where Have All The Fireflies Gone?"]

Don Salvatore is a science educator at the Museum of Science in Boston. He is the coordinator of the Firefly Watch citizen science project. You can find more nature stories by him on his Backyard Biology web site http://www.backyardbilogy.net.

BIG BONE LICK NATIONAL NATURAL LANDMARK CELEBRATED

by Berl Meyer

Diorama at Big Bone Lick State Park – Berl Meyer, 2009

A dedication ceremony was held May 1, 2009 to celebrate Big Bone Lick State Park's new status as a National Natural Landmark (NNL).

Almost all the mammal fossils found in Kentucky are from the Quaternary Period. Quaternary clays, sands, and gravels are found in valley bottoms and terraces all over Kentucky. The most famous site for Quaternary mammal fossils is Big Bone Lick, which is now Big Bone Lick State Park near the Ohio River near Union, Kentucky. The first paleontological site in North America was probably at Big Bone Lick. French commander Baron Charles Lemoyne de Louqueuil organized a dig there in 1739. Bones retrieved by him were sent to the Paris Natural History Museum in France. Later, Thomas Jefferson sent Captain William Clark, of Lewis and Clark fame, to dig the bones there in 1807. Jefferson sent these bones to the American Philosophical Society in Philadelphia (and he kept some of them at the White House, and later at Monticello, his home). Much later, in the 1960's, the University of Nebraska conducted a dig at Big Bone Lick.

The following mammal fossils have been recovered at Big Bone Lick: possible wolf, possible black bear, modern bison, ancient bison, two types of musk ox, American moose, wapiti (elk), common Virginia deer, extinct stag moose, caribou, flat-headed peccary, extinct North American horse, possible tapir, American mastodon, woolly mammoth, and two types of giant ground sloth. The most common fossil found at Big Bone Lick was the modern bison.

The herbivores (plant-eating animals) were attracted to Big Bone Lick because of salt springs. The big mammals tramping through the water-laden, clayey deposits created a deep, sticky mire, which trapped all sorts of salt-starved mammals who came to lick the salt. Bones are generally not articulated because subsequent trampling long after death caused the bones to be spread apart.

The National Natural Landmarks Program (NNL) recognizes and encourages the conservation of outstanding examples of the United States' natural history. It is the only natural areas program of national scope that identifies and recognizes the best examples of biological and geological features in both public and private ownership. The program was established on May 18, 1962 by United States Secretary of the Interior Stewart Udall.

The program aims to encourage and support voluntary preservation of sites that illustrate the geological and ecological history of the United States, and to strengthen the public's appreciation of the country's natural heritage. As of June 2005, 587 sites have been added to the National Natural Landmarks Program. The registry includes nationally significant geological and ecological features in 48 states, American Samoa, Guam, Puerto Rico, and the Virgin Islands.

The National Park Service administers the NNL Program, and if requested, assists NNL owners and managers with the conservation of these important sites. Land acquisition by the federal government is not a goal of this program; NNLs are nationally significant sites owned by a variety of land stewards, and participation in the program is voluntary.

The legislative authority for the National Natural Landmarks Program stems from the Historic Sites Act of 1935 (49 Stat. 666, 16 U.S.C. 641); the program is governed by federal regulations. [1] The Natural Landmark program does not have the protection features of **Section 106** of the National Historic Preservation Act of 1966. Thus, designation of a National Natural Landmark presently constitutes only an agreement with the owner to preserve, insofar as possible, the significant natural values of the site or area. Administration and preservation of Natural Landmarks is solely the owner's responsibility. Either party may terminate the agreement after they notify the other.

There are 587 sites across the U.S. that have been named to the program since it was created in 1962. Big Bone Lick joined their ranks in February 2009, following a lengthy nomination process.

Teachers Lisa Lokesak and Traci Branstutter – Berl Meyer, 2009

Big Bone Lick will join the other National Natural Landmarks in Kentucky that include Creelsboro Natural Bridge, Henderson Sloughs, Lilley Cornett Woods, Red River Gorge and Rock Creek Research Natural Area.

Big Bone Lick dedication and the 3rd grade class from New Haven Elementary – Berl Meyer, 2009

The dedication ceremony celebrated that achievement and the people who made it happen, including an unlikely champion: a third-grade class from New Haven Elementary School in Union--hopefully future junior naturalists.

In September, the students adopted Big Bone's NNL nomination as a class project after teachers Lisa Lokesak and Traci Branstutter read a newspaper article about it.

NNL Program Director Margi Brooks said it was the first time students wrote letters in support of a nomination. She used them in her presentation to the National Parks Service advisory board in December.

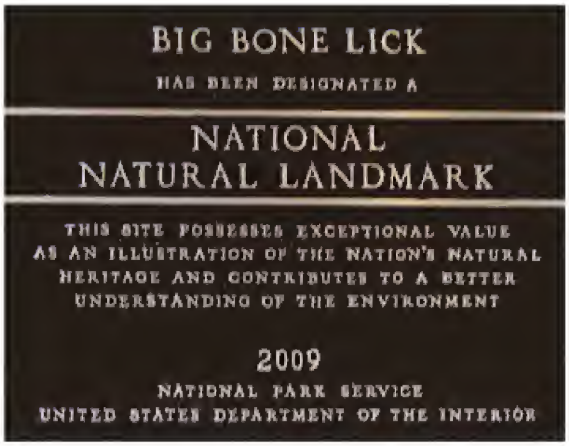
The students have since learned about Big Bone Lick firsthand from Union archaeologist Jeannine Kreinbrink, who co-wrote the NNL nomination paper with Northern Kentucky University professor Dr. John Rockaway.

Lokesak said that the 19, 8- and 9-year-olds now get excited about writing assignments because they've seen what can come from their efforts.

They were also planning a trip to pick up trash at Big Bone Lick as a way to give back to the park but Lokesak said that the cleanup was not necessary because the park staff already keeps the park nearly spotless.

The students were honored guests at the dedication ceremony, which will celebrate the four years of hard work that went into achieving NNL status.

Big Bone received a bronze plaque from the National Parks Service. The non-profit Friends of Big Bone has raised money to build a



BIG BONE LICK
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NATIONAL
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THIS SITE POSSESSES EXCEPTIONAL VALUE
AS AN ILLUSTRATION OF THE NATION'S NATURAL
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UNDERSTANDING OF THE ENVIRONMENT
2009
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

permanent sign for it at the park. The students raised $125 money for the sign from local donations.

Refreshments after the ceremony was sponsored by community business partner, Heritage Bank in Walton, which paid for the bus and the students' lunch.

Coming up in the fall issue of KNN will be an article on the **New Madrid Seismic Area** with the hope that this fall conference 2009 will be well attended. I have an all day excursion scheduled on October 11 to **New Madrid, MO** and a morning trip on October 12, for the "Bend" where the **Mississippi River** ran backwards plus other earthquake landforms.

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***Berl Meyer** is the current Geology Coordinator for KSNH, the former KSNH webmaster, and the current webmaster of the **U.S.S. Constitution CVA/CV 64 website**. Berl was stationed on this Naval Aircraft Carrier during the Vietnam War as an Aerographer (weather guesser).*

FORTY YEARS OF SMOKY MOUNTAIN MEMORIES

by W. H. (Wally) Roberts

During the middle of June, 1969, my family and I were on vacation in the Smoky Mountains when the most famous unsolved disappearance in the Smokies occurred. **Dennis Lloyd Martin** disappeared from Spence Field on June 14, 1969, six days before his seventh birthday, The most intensive and longest **search ever conducted for a lost person**, to that date, failed to turn up any trace of him. The search involved hundreds of professionals and volunteers and lasted nearly three months.

Dennis Martin, picnicking with family and playing with friends, ran into a clump of bushes on Spence Field and vanished. The search began within five minutes. It was daylight, and he was with his loving family. They heard no sounds, saw no strangers or animals, and were left to ponder why.

Having hiked and talked with experienced ranger searchers, J. R. Buchanan and Dwight McCarter, about this and other disappearances, they stated they had to accept the sad and sobering truths that the Smokies are full of secrets they refuse to yield to mere mortals. The **unsolved disappearance** of Dennis Martin is one of those secrets.

Thirty-one years later, Larry Houston and I were camping at **Cades Cove** and, for two reasons, decided to hike to **Spence and Russell Fields**. One reason being it was mid-June and the **heath balds** would be covered with blooming laurel, flame azaleas, and rhododendron. The second reason was to see, for ourselves, the area of the unsolved disappearance of Dennis Martin.

The following was taken from our journal dated June 21, 1980: We awoke early, had a light breakfast, packed our backpacks, and walked out of our campsite at 6:45 a.m. Our hike would begin at the end of the Cades Cove Picnic Area on the Anthony Creek Trail, join the Bote Mountain Trail, continue on to Spence Field, followed by Russell Field, then back down Russell Field Trail to Anthony Creek Trail, and back to the campsite.

After hiking 3.4 miles and gaining 1860 feet in elevation, we intersected the **Bote Mountain Trail**. Bote Mountain Trail was constructed for the Park Service by a Cherokee Indian labor force. To decide which route to follow, they conducted a vote and since there is no "v" sound in the Cherokee language, they indicated their vote by saying "bote". Consequently, the route they chose became known as Bote Mountain and the route not picked became known as **Defeat Ridge**.

As we continued the last 1.5 miles to **Spence Field**, we passed back-country campsite #9 and encountered our first bear beside the trail. We hurried along only to come upon a small wild boar piglet which caused our pace to quicken since "Momma Boar" was most assuredly nearby.

Spence Field was beautiful, full of blooms, and offered nice vistas of Fontana Lake, about 7 miles away down the south drainage. Larry and I explored the rock outcrop, upon which the Martin family held their picnic, and looked around the clump of trees where Dennis Martin was last seen. The site yielded no clues as to how his total disappearance could have occurred so close to a large party of family and friends.

After resting on the rocks and enjoying the views, we headed west on the Appalachian Trail towards the Russell Field Shelter. About 1/2 mile from the shelter, we began hearing people calling for help. We hurried toward the shelter only to find a most unusual sight. Inside the three walled stone shelter with chain-link fence on the front, we found a Boy Scout leader and his troop being held hostage by a bear and her two cubs. It reminded us of a zoo in reverse, with the bears not willing to let the troop, with its food, out. Larry and I started yelling loudly, beating on our metal canteens, and waving our arms wildly. The mother bear turned and looked at us, looked again at the shelter, then slowly turned and walked away with her cubs. The Boy Scouts and their leader were greatly relieved, and we ate our trail lunch with them while they prepared and ate their breakfast. In June, 1980, the Russell Field shelter was perhaps the most picturesque of the AT shelters, set in a clump of green spruce/fir trees and surrounded by beautiful blooming flame azaleas.

After bidding farewell, Larry and I headed down the Russell Field Trail 3.5 miles to intersect with our original Anthony Creek Trail and 1.5 additional miles back to the Cades Cove Picnic Grounds and on to our campsite. In total, with our explorations, we had hiked nearly 15 miles and it took us about 6 hours to complete the loop.

Approximately 10 million people visit The Great Smoky Mountains National Park each year, making it our most visited national park. The number of these people who meet with any type of misfortune is a fraction of the total visitor numbers. The personal stories of individuals that vanished during daylight and surrounded by other people make for great mystery. When one visits these sites, you leave more amazed and mystified than any words can ever convey. A mystery remains a mystery only as long as no one knows what truly happened. Perhaps some day someone will reveal the truth about little Dennis Martin's mysterious disappearance.

Wally Roberts *was Kentucky Naturalist of the Year 2002. He is a long-time biology instructor, interpretive naturalist, and nature photographer. He graduated with a BS in Biology from Morehead State University, and M.Ed. in Biological Education from the University of Louisville. He's been president of KSNH (3 times), former president of the Falls of the Ohio Chapter, and past president of the Board of the Louisville Nature Center. He's currently the Grant Coordinator for KSNH.*

KENTUCKY SOCIETY OF NATURAL HISTORY STUDENT RESEARCH GRANTS IN THE FIELDS OF NATURAL HISTORY/BIODIVERSITY OF KENTUCKY

by W. H. (Wally) Roberts

The Kentucky Society of Natural History (KSNH) is pleased again to announce the offering of a funding source to help support natural history/biodiversity knowledge in Kentucky. The grants will be awarded to students attending a Kentucky College or University during the 2009-2010 school year. Grants up to $1000 for graduate students, and up to $500 for undergraduate students will be awarded. These grants may be used to pay for tuition, books, travel and living expenses, consumable supplies, and other materials and expenses. The grants may not be used to pay time or labor for any party. The successful applicants will be notified by the end of July 2009. Proposals will be reviewed by the KSNH Grant Committee.

Proposal must include:

1. Current Curriculum Vitae, detailing course and work background.
2. A proposal (not to exceed two single-spaced typed pages) describing the proposed research and the role the grant would play in the research.
3. An itemized budget.
4. Two letters of recommendation, one of which must be from the applicant's major professor or project director (with telephone number and/or email). One of the two recommending sponsors must also be a KSNH member.
5. Include all other funding sources for your proposed research.

Applicants are encouraged to become **members of KSNH** ($7.50/year for students), but membership is not required to be awarded a grant. The grant recipient is required to provide KSNH with a short summary of the funded research within one year of receiving the grant. The grant recipient is also required to present his/her work at either a spring or fall conference of the Kentucky Society of Natural History. Additional presentations at other meetings, such as the annual **Kentucky Academy of Science** meeting, are also encouraged.

Please submit three copies of all items listed above including letters of recommendation to:

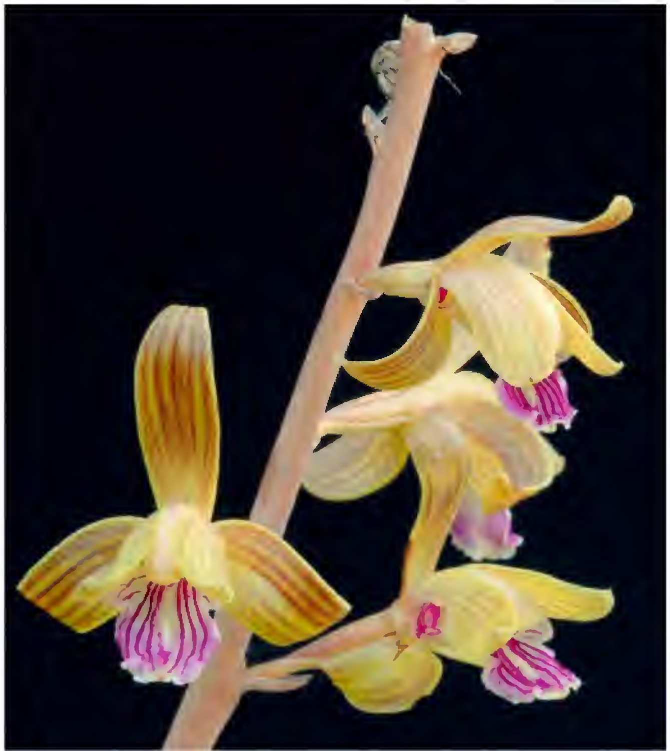
W.H. (Wally) Roberts, KSNH Grant Committee Chairman
9208-102 Hawthorne Pointe Drive
Louisville, Kentucky 40272-2593
email: **waldonroberts@bellsouth.net**

Proposals may be submitted at any time. To be considered for the July 31, 2009, award date, all materials must be received by July 1, 2009. Any proposals received after that date will be held and considered for the 2010-2011 disbursement.

For additional information, go to our website **www.ksnh.org** and click on **Grant Information**.

CRESTED CORAL ROOT – *HEXALECTRIS SPICATA* (WALT.) BARNH. (1904)

by Chris Bidwell



Hexalectris spicata **(Walt.) Barnh. (1904) (crested coral root) - Chris Bidwell, 2008**

This herbaceous perennial is in the **Orchidaceae** (orchid) family. **Crested coral root** has several other common names: spiked crested coral root, cock's comb, brunetta, leafless orchid, dragon's claw, and raiz-de-coral crestada. One will also see coral root as one or two words. The species has undergone many name changes over the years:

Hexalectris spicata **(Walt.) Barnh. (1904) Synonymy:**

Arethusa spicata Walt. (1788)
Bletia aphylla Nutall (1818)
Hexalectris aphylla (Nutall) Raf. (1825)
Hexalectris aphylla (Nuttall) Raf. Ex S. Wats. & J.M. Coult. (1890)
Hexalectris squamosa Raf. (1838 "1836') nom.illegit.
Corallorhiza spicata (Walt.) Tidestrom (1941)
Hexalectris spicata forma albolabia P.M. Br. (1995)

The current generic epithet, *Hexalectris*, comes from Greek *hex*, meaning six and *alectryon* meaning cock's comb – referring to the 6 (actually varies from 5-7) longitudinal crests on the plant's floral lip. The specific epithet, *spicata*, refers to the spiked arrangement of the flowers along the stem. It comes from the Latin epithet "*spicata*" meaning spike/spicata as flowers arise on the axis. Crested coral root orchid was first described and named, *Arethusa spicata*, by Tom Walter of South Carolina in 1788. He placed it in the genus *Arethusa*, the dragon-mouth orchid, because of the coral root's resemblance to that genus. **Rafinesque** reassigned it giving the orchid the current generic epithet, *Hexalectris*, in 1825.

Crested coral root is the most frequently used common name. This common name can lead to confusion with plant members of the genus *Corallorhiza* (coral root), whose rhizomes resemble coral and can even be a coral-pink color. *Hexalectris* and *Corallorhiza* are distinct genera. *Hexalectris* flowers are striped while *Corallorhiza* flowers are mottled, spotted, or uniform in color.

Crested coral root is found in temperate southeastern United States with some populations in the west and south. It has been found, historically, in 22 states: north to Maryland, west to Arizona, south to Texas and Louisiana, and east to the coastal states. It is found in shaded oak, hickory, pine xeric and mesic forests with shaded slopes, upland forests, dry rocky creek beds, open woodlands, and limestone glades and outcroppings being known habitats. It grows in areas where competition is minimal from other plants, especially invasives. The soil is usually rich in humus overlying sandstone, dolomite, or limestone rock. Loss of habitat is a leading factor in the plant's decline in many areas. **The Nature Conservancy** currently ranks crested coral root as a **G5** plant (w-3) indicating the species is secure worldwide. In the United States the species is given the **National Heritage Rank** of 4 (tentatively secure nationally). In Kentucky it is infrequent and the only **state ranked** as secure, so far. Crested coral root, like other orchids such as lady slippers, can take 10-16 years to mature (produce flowers and seed).

Hexalectris spicata is a soft/firm fleshy perennial that is smooth, leafless (has scaly bracts along the stem), rootless (has rhizomes), and is **mycotrophic** (~**saprophytic**), lacks chlorophyll, and is usually found in local populations. As an orchid its life history is most complicated and still not fully understood. Its chromosome number is unknown. Orchids must get nutrition from decaying organic matter or some other plant. But orchids are not capable of true parasitism or saprophytism. Crested coral root has a mycotrophic or mycorrhizal form of obtaining nutrition in which a parasitic/saprophytic fungus and its hyphae are retained in the coral root's rhizomes. It is from this living fungus that the crested coral root draws its energy. It is believed that the orchid contributes substances to the fungus which it cannot produce itself. Thus the fungus is saprophytic and parasitic but the crested coral root is in a mutualistic-symbiotic relationship with the living fungi and its hyphae. Any disturbance to this relationship such as habitat destruction or chemical contamination threatens the orchid. The primary fungus found in crested coral root rhizomes is a species of **jelly fungus** (**Basidiomycota**: **Agaricomycotina**). This saprophytic/parasitic fungus supplies crested coral root its necessary nutrients as the orchid does not have leaves or chlorophyll and can not photosynthesize. This orchid's rhizomes (also known as rootstalk or rootstock) differs from roots in that rhizomes grow horizontally underground, store food, and enables a plant to reproduce itself. Rhizomes do not die when they are cut. Rhizomes have nodes, buds, tiny leaves/bracts and have roots (which gather food) on their lower side and shoots from their upper side which generates new plants.

The aerial stems of the crested coral root are actually extensions of the plants rhizomes and can be 6-32 inches tall. The stems can be yellow-brown, pinkish-brown, or purple in color and makes it difficult to find and detect the plant. The rhizomes are thick and are encircled at intervals by growth scars of successive bracts which can aid in aging the plant. Flower inflorescences are racemes/spikes with 8-25 flowers toward the top of the plant. Bracts along the stem are lanceolate to ovate in shape and are 5-10 mm x 2-6 mm in size. Crested coral root's beauty is found in its magnificent flowers with 2 lateral petals, 3 sepals, and 1 lip (labellum) petal. The plant is leafless, has bracts, and does not contain chlorophyll.

The lateral petals and sepals are tan to purple with purple to brown veins. The distinct lip petal is yellow/cream/white with deep purple veins and has 3 shallow lip lobes. There are also 5-7 prominent crests or longitudinal ridges (lamellae) about 1 mm tall present on the lip. The ascending flowers with a single stem and pistil are separated by a column, known as the rostellum. The crested coral root blooms from July to August. The fruits are strongly ribbed, ellipsoid-shaped capsules, 16mm x 30 mm x 8 mm x 20 mm and contain thousands of minute seeds 0.1-.25 mm in length. The seed capsules can persist well into the next flowering season. The tiny seeds, as in most orchids, are wind dispersed.

Numerous insects, deer, feral pigs and mice all eat/destroy crested coral root. Slugs, rabbits, snails, and box turtles may also utilize the plant. Rabbits and slugs especially eat the emerging shoots. The reddish-purple color probably helps keep animal/insect predation in check as the color serves as a warning that the plant could be toxic or not palatable. The crested coral root is probably edible to humans and most animals as are most orchids. But, being one of Kentucky's most beautiful orchids and its infrequent status, it should be left alone for future plant lovers to marvel over. Hummingbirds and butterflies and other flying insects obtain the plant's nectar and serve as its pollinators. There is no detectable scent to act as an attractant to pollinators. Native American grave sites have been found decorated with crested coral root orchids. Whether by chance or intentional seeding/planting, it is not known for sure how the plants managed to be at these grave sites.

As one of Kentucky's largest and prettiest orchids, it is always a pleasure to come upon the crested coral root and marvel at its size, stature, and coloration. As it blends in so well with its surroundings one should stay on trails to avoid damaging existing fragile populations and their habitats. This July and August don't let the heat keep you from seeking this rare Kentucky plant gem. Realize that if you find the crested coral root orchid you are looking at a plant that could well be over 10-16 years or more older. Have a great summer and enjoy all our summer wildflowers and Kentucky's scenic areas.

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***Chris Bidwell** is an amateur naturalist and the current President of the Falls of the Ohio Chapter of KSNH.*

THE GREAT SUNFLOWER PROJECT

by Gretchen LeBuhn

As you sit at the table today, do you know where the water you are drinking came from? If you are in Washington, D.C., 90% of the drinking water comes from the Potomac River. How about the last prescription medicine you took? It probably originated from a natural source. Of the top 150 prescription drugs used in the U.S., 118 originate from natural sources: 74 percent from plants, 18 percent from fungi, 5 percent from bacteria, and 3 percent from a species of snake. And, where did the ingredients for your lunch and dinner come from? One of every three bites you took probably came from a plant pollinated by **wild pollinators**. This is just the beginning of list of the services provided by healthy, natural ecosystems.

The **conservation of pollinators** is central to biodiversity and life on Earth, to food security and to the global economy. **Pollinators** provide essential ecosystem services to agricultural and natural ecosystems. For agriculture, as much as 35% of the global food supply depends on **animal pollinators**. Amazingly, with this much of the food supply at stake, agriculture relies almost exclusively on a single pollinator, ***Apis mellifera***, the **European honey bee**. In the **United States** alone, the value of pollination to crop production by this single species is estimated to be $14 billion. Our reliance on this species is still increasing. Demand for honey bee colonies increased approximately 25% from 1989 to 1998 and has continued since that time.

Unfortunately, over the past sixty years, honey bee colonies have declined by 59%, due to the effects of the **varroa mite** among other things. The **USDA** and **Apiary Inspectors of America** have reported that in each of 2006 and 2007commercial bee-keepers in the United States lost a little over 30% of their honey bee colonies. Much of this loss has been attributed to **Colony Collapse Disorder**, a disorder that results in the loss of a colony. While we know something about decreases in the number of honey bee colonies, we know very little about what this has meant for **pollinator service**.

***Xylocopa* sp. (carpenter bee) - Ginny Stibolt, 2008**

Pollinator service depends on both **honey bees** and other **native pollinators**. The actual value of **native pollinators** for crop production is much more difficult to estimate because the value of specific pollinators differ for each crop and are dependent on geographic location, availability of natural habitat, and pesticide use. Studies in agricultural systems have shown that native pollinators can provide significant pollinator service directly and indirectly because the efficiency of honey bees is improved by the presence of native bees. We know native bees can have a significant role because increases in the number and species of **native bees** have been associated with increases in crop production. In addition to their role as pollinators of crops, animals pollinate approximately three-fourths of the **angiosperms**. A recent study suggests that declines in pollinators are increasing the risk of extinction of many native plant species, particularly in species-rich regions. In these systems, non-honeybee pollinators are of primary importance. For example, in the United States alone, there are approximately 3,500 species of **native bees** that may be involved in pollination.

There have also been local declines reported in native pollinators in Europe, Asia, Central and South America, Africa, and Australia and the United States and Canada, but there have been no regional or continental surveys of pollinators. This means that no one knows exactly how pervasive the declines in bee populations are and what affect these declines are having on pollination of plants. No one knows because never before has there been a survey at a large enough scale to understand what's happening with bees---until now.

The Great Sunflower Project is designed to do just this. Using sunflowers as standardized thermometers for each site where they are planted, the 50,000 participants time how long it takes for five bees to visit their sunflower, effectively creating an index of pollinator service. By also taking and uploading photographs of the visiting bees, the data collected can both be verified and will answer whether or not native bees are filling in where we have had a loss of honey bees through colony collapse disorder or other maladies. By counting seed set in seed heads sent in by participants, we can relate our visitation data to actual seed production. Using these data we can evaluate the state of pollinator service across the United States and Canada, determine what the environmental factors are important for pollinators at local, regional and continental scales and across rural, suburban and urban landscapes and evaluate whether native pollinators can fill in where European honey bees have declined. Do join us by signing up at **www.GreatSunflower.org**!

***Gretchen LeBuhn** is the Director of the **Great Sunflower Project** and Associate Professor of **Biology** at **San Francisco State University**.*

SUMMER 2009 NEWSLETTER PHOTO CONTEST: THE TOPIC IS "KENTUCKY AMPHIBIANS AND/OR REPTILES"

Rana catesbeiana Shaw, 1802 (American bullfrog) - Chris Knopf, 2008

Rana clamitans Latreille, 1801 (green frog) Chris Knopf , 2008

Bufo americanus Holbrook, 1836 (American toad) - David Becker, 2006

Notophthalmus viridescens (Rafinesque, 1820) (eastern newt) Kathy Dennis , 2008

Rana sphenocephala - Cope, 1889 (Southern Leopard Frog) - David Becker, 2008

Bufo americanus Holbrook, 1836 (American toad) - Kathy Dennis ,

Lampropeltis triangulum - (Lacepède, 1789) (milksnake) - David Becker, 2008

Terrapene carolina carolina (Linnaeus, 1758) (eastern box turtle) - Kathy Dennis , 2008

The Summer 2009 Newsletter Photo Contest had 12 judges.

Newsletter Photo Contest Topics for 2009+:

Fall 2009 – Fall Color,

Winter 2009 – Kentucky Winter Bird Residents,

KSNH FIELD TRIP: ODONATES AT HORNER WILDLIFE SANCTUARY IN OLDHAM COUNTY, JUNE 6, 2009

By Paul Florence

On June 6, 2009, there will be a KSNH Odonate Field Trip to **Horner Wildlife Sanctuary** in **Oldham County**. Paul Florence will lead a field trip focusing on the variety and biology of local damselflies and dragonflies. Topics covered will include how to tell the difference between damselflies and dragonflies, habitats and the different life stages that can be found in them, food sources utilized by the different life stages, and identification of local species. Details will be arranged later. Parking & attendance will likely be limited. Contact Paul at paul.florence@kctcs.edu or by phone at (502) 499-2714 to reserve a spot.

CHAPTER NEWS

Falls of the Ohio Chapter by Chris Bidwell - Falls of the Ohio Chapter president

I would like to wish everyone a wonderful summer. Our **2009 Spring Conference** at **Pine Mountain Settlement School** was just wonderful. There were several new members there and I had long talks with older members of this great organization. As spring is rapidly passing by I realized how time does really fly. I see our aging members trying to keep up with us "younger folk" and it is heart-wrenching to see some of my mentors and peers decline in health and ability to hike these many Kentucky scenic areas as they once could. At the same time, I can't help but marvel at how some of our older members who so deeply love this organization manage to be part of our outings. For example, two of our octogenarian members, Mike Duncan (87) and Al Boice (81), drove themselves to Pine Mountain Settlement School and participated in many of the activities. What an inspiration to all of us. I just turned 60. I wonder if I can be that fortunate if and when I live to my octogenarian years. My hat is off to my fellow senior citizens and KSNH members. Age, as nature, knows no bounds.

Falls of the Ohio Chapter Events (see front cover for regular meeting times and place, field trip times may be found below or are to be determined. Contact Chris Bidwell for more information.

2009 Dates	Event/Speaker	Topic / Outing	Photo Contest Topic
May 21	Meeting: Major Waltman	Olmstead Parks	Snails
May 23	Field Trip: TBD	Car Tour of the Olmstead Parks	
June 18	Meeting: **David Sakrison**	Ultralight-Led Crane Migrations. Sakrison is the author of **Chasing the Ghost Birds: Saving Swans and Cranes from Extinction.**	Guess What This Is in Nature
June 20	Field Trip: Robert Bridges	Purple Martin Site Outing & Picnic @ Bernheim Arboretum & Research Forest	
July 16	Annual Picnic: Kurt Mason	Soil Conservation	none
September 17	Meeting: Dr. Mark Wourms	Tentative Topic: Bernheim Forest	Moths & Butterflies
September 19	Field Trip: TBD	TBD	
October 15	Meeting: Dr. Art Parola	Stream Restoration	Halloween's Patterns & Colors in Nature
October 17	Field Trip: Carl Suk	Jefferson County Memorial Forest & Non-Native Invasive Plants	
November 19	Meeting: TBD	TBD	A Fall Leaf (single leaf)
November 21	Field Trip: TBD	Muscatatuck National Wildlife Refuge	
December 17	Annual Dinner:	TBD	none

KENTUCKY NATURALISTS' CALENDAR

(added as space and time allow)

2009:

June 2-16, 2009: Junior Naturalist Programs @ John James Audubon State Park, 3100 US 41 North, Henderson, KY 42420.
June 2, 2009; 9:00 a.m.-12:00 p.m. Junior Naturalist Programs Ages 10-12; Audubon Museum
June 9, 2009; 9:00 a.m.-12:00 p.m. Ages 8-9; Audubon Museum
June 16, 2009; 9:00 a.m.-12:00 p.m. Ages 6-7; Audubon Museum
June 16, 2009; 7:00 p.m. S'mores Celebration and Awards Ceremony for all Junior Naturalists and their families (Audubon Campground Shelter).
Open your eyes to the amazing wonders in your own back yard. Learn about how we protect these beautiful resources. Programs meet at the Audubon Museum. Kids who attend any one of these dates will receive a patch and certificate. Children ages 10-12 will meet on June 2, Children ages 8-9 will meet on June 9. Children ages 6-7 will meet on June 16. Pre-registration is required. Maximum 20 attendees per date. Contact Julie McDonald at (270) 826-2247 or by email at juliea.mcdonald@ky.gov, or visit the park website at http://parks.ky.gov/findparks/recparks/au/ for more. Program Fee: $10.00

June 6, 2009: KSNH Odonate Field Trip @ Horner Wildlife Sanctuary in Oldham County, Kentucky. KSNH Invertebrate Coordinator Paul Florence will lead a field trip focusing on the variety and biology of local damselflies and dragonflies. Details will be arranged later (check the next newsletter). Parking & attendance will likely be limited. Contact Paul at paul.florence@kctcs.edu or by phone at (502) 499-2714 to reserve a spot.

June 6, 2009: Creatures of the Night Adventure Trek/National Trails Day @ Audubon Museum, John James Audubon State Park, 3100 US 41 North, Henderson, KY 42420 (6:00 p.m. – 9:00 p.m.). Venture out with our Interpretation staff on National Trails Day and discover the mysticism of nighttime creatures. Dress for the weather and bring a flashlight. Contact Julie McDonald at (270) 826-2247 or by email at juliea.mcdonald@ky.gov, or visit the park website at http://parks.ky.gov/findparks/recparks/au/ for more.

June 10-14, 2009: In the Footsteps of Lucy Braun @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. This four-day forest study workshop is named in honor of one of the first and foremost conservationists of the 20th century, E. Lucy Braun. Dr. Lucy, as she was called by her colleagues, devoted her life to the study of plants and to conservation campaigns to save wilderness areas and other natural sites. The four-day workshop will combine field trips, lectures, and slide presentations in the study of forest types found in Eastern Kentucky. Daily field trips will include four- to eight-mile hikes. The workshop is geared toward adults. Fee based. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

June 21-24, 2009: 4th Hellbender Symposium @ Cumberland Falls State Park, in Corbin, Kentucky.

June 27, 2009: The Society of Kentucky Lepidopterists (SKL) Annual 4th of July Oldham County Butterfly Count @ Horner Wildlife Sanctuary. For details see the SKL website at http://bioweb.wku.edu/faculty/Marcus/KYLeps.html or contact trip Leader Charlie Covell via email at covell@louisville.edu.

July 24-26, 2009: Midwest Native Plant Conference @ Hope Hotel at Wright-Patterson Air Force Base in Dayton, OH. This event is hosted by the newly formed Midwest Native Plant Society, Flora-Quest and the Greater Cincinnati Wild Ones. This conference will include educational programs and field trips designed to connect people and nature. The focus will be on native prairies and wetlands with emphasis on the importance of native plant communities. For more information see their website at http://cincinnatibirds.com/wildones/MWNP_Society/preregister.php or call (513) 941-6497.

August 12-16, 2009: In the Footsteps of Lucy Braun @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. This four-day forest study workshop is named in honor of one of the first and foremost conservationists of the 20th century, E. Lucy Braun. Dr. Lucy, as she was called by her colleagues, devoted her life to the study of plants and to conservation campaigns to save wilderness areas and other natural sites. The four-day workshop will combine field trips, lectures, and slide presentations in the study of forest types found in Eastern Kentucky. Daily field trips will include four- to eight-mile hikes. The workshop is geared toward adults. Fee based. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

August 28-30 or September 12-14, 2009: The Society of Kentucky Lepidopterists (SKL) Summer Field Trip @ Jackson Purchase (Western Kentucky). For details see the SKL website at http://bioweb.wku.edu/faculty/Marcus/KYLeps.html or contact trip leader: Gerald Burnett gdburnett@brtc.net.

The mission of the Kentucky Society of Natural History is to actively promote study and interest in Kentucky's rich natural heritage throughout the Commonwealth. Members are typically interested in a broad spectrum of natural sciences and related fields. Among the more prominent activities of the society, are the annual Spring and Fall Conferences, selection of a "Naturalist of the Year", nature photography contests, and a variety of knowledgeable speakers and field trips. We invite anyone who shares our interests to join us. For membership information or the address of the nearest affiliated chapter, please contact:

KSNH, P.O. Box 72777, Louisville, KY 40272-0777, or visit our website <http://www.ksnh.org> for the membership form. Membership dues are: Individual $15, Family $25, Full Time Student $7.50, Life: $300.

The Kentucky Society of Natural History is an official 501(c) (3) tax-exempt nonprofit organization which was formed in 1939, and incorporated in 1943 in Louisville, Kentucky. All contributions to THE KENTUCKY SOCIETY OF NATURAL HISTORY are tax-deductible to the full extent of income tax laws.

Published quarterly, The Kentucky Naturalist News is the official newsletter of KSNH. Unsolicited contributions are encouraged. Please send articles to: **Barry Nichols, KNN Editor, P. O. Box 21182, Louisville, KY 40221**. You can also email newsletter submissions by sending them to kyfauna@iglou.com.

Kentucky Naturalist News Deadlines:

Issue	Deadline	Tentative Publish Date
Summer Issue	May 1, 2009	June 1, 2009
Fall Issue	August 1, 2009	September 1, 2009
Winter Issue	November 1, 2009	December 1, 2009
Spring Issue	February 1, 2010	March 1, 2010

For submissions, please cite references. To assist, you may use: http://www.lib.ncsu.edu/lobo2/citationbuilder/citationbuilder.php.

Kentucky Society of Natural History,
P.O. Box 72777,
Louisville, Kentucky 40272-0777.

Formed 1939,

Incorporated 1943

Kentucky Naturalist News

Official Newsletter of the Kentucky Society of Natural History

Volume 67, Number 3, Fall 2009

Website: http://www.ksnh.org

2008-2010 Officers

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Vice Pres.: Zeb Weese (zeb.weese@ky.gov)
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2008-2010 Coordinators

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Environmental Ed.: Larry Hilton (sbear@ksnh.org)
Field Trips: James Kiser (james.kiser@stantec.com)
Grants: Wally Roberts (waldonroberts@bellsouth.net)
Geology: Berl Meyer (geology@ksnh.org)
Herpetology: John MacGregor (john.macgregor@ky.gov)
Historian: Joe Battcher (via mail)
Hospitality: Cherry Baker (cherry@ksnh.org)
Invertebrate: Paul Florence (paul.florence@kctcs.edu)
Mammalogy: Mark Gumbert (mwgumbert@copperheadconsulting.com)
Naturalist of the Year: Wally Roberts/Joe Settles
Photography: Chris Bidwell (mabteacher1@yahoo.com)
Programs: Pat Meyer (kybirder@bellsouth.net)
Publicity:
Youth Activities: Jeff Foster (jfoster@sscc.edu)

Board Members at Large

Charlie Baker (macganzer@bellsouth.net)
Pete Glauber (cherokee@ksnh.org)
Herb Zimmerman (via mail)

Affiliated Chapters

Arches of the Cumberland Chapter (Slade) meets informally, call President Dell Sasser for details, 606-666-7521 x73559, or (606) 233-8938, or via email (dell.sasser@kctcs.edu)

Falls of the Ohio Chapter (Louisville) meets every 3rd Thursday of each month except Jan, Jul, Aug, & Dec at 7:00 PM at the Louisville Nature Center, 3745 Illinois Ave, Louisville, 40213. Call President Chris Bidwell at (502) 458-1328, or via email (mabteacher1@yahoo.com).

Wilderness Trail Chapter (Pineville) meets the first Thursday of each month, March through December, at 7:00 p.m., generally at Pine Mountain State Resort Park in the Ray Harm Room, 1050 State Park Road Pineville, KY 40977-0610 (800-325-1712). Call President Tom Toole at (606) 248-3078, or via email (tom.tdtoole@gmail.com).

Diospyros virginiana **(common persimmon) - Barry Nichols, 2006**

EDITOR'S NOTES

Greetings all! As you gear up for the fall meeting at Reelfoot Lake, I hope you're anticipating fall as much as do I. This issue contains the fall 2009 agenda as well as the registration form. We'll be back to the normal schedule with the winter 2009 issue (KSNH-KNN-2009-4). The deadline for submissions for the next issue is November 1, 2009. That deadline isn't terribly far away!

Folks have really outdone themselves with fantastic articles, KSNH activity reports, photos, and a great agenda for the upcoming meeting. By the way, don't forget we'll be holding elections at the Reelfoot Lake meeting. We can always use energetic folks such as yourselves.

As always, please mail any articles, news, topical requests, photos, etc to **kyfauna@iglou.com** or by postal mail via the KSNH address on the back cover. Also, please include contact information. I'll see **you** at Reelfoot!

--Barry

THE NEW MADRID SEISMIC ZONE

by Berl Meyer

Our next Fall Conference will be held at **Reelfoot Lake** mostly in northwestern Tennessee (but a little bit extends up into Kentucky). I thought that I would give some geology of the area that might influence you to join me on a **fault** finding expedition on Friday October 9th.

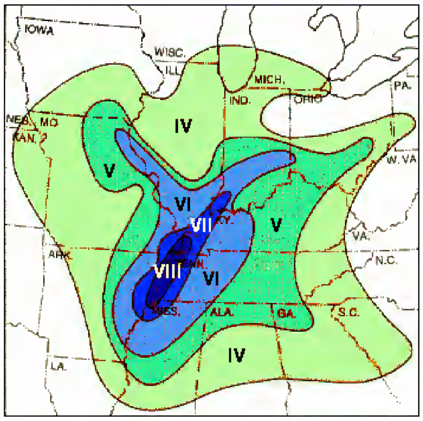
In spite of his rude awakening, **Mathias Speed** was one of the **luckiest travelers** tied up along the **Mississippi River** on the fateful night of Feb. 7, 1812. After coming to his senses, he cut his boat loose from the collapsing riverbank and moved out into the middle of the channel to avoid being crushed by falling trees. In the darkness, he rode out the great swells that threatened to sink his craft (**Feldman 2005**).

An untold number of other boatmen perished that night, but Speed and his companion found themselves still alive as the morning sun illuminated the devastation around them. Just after daybreak, the two men finally landed at the town of **New Madrid, Missouri**, where "there was scarcely a house left entire" in the former **settlement** of 2,000 people.

The **earthquake** that nearly killed Speed capped a **tremulous 8-week period** in the history of the early United States. Starting on **December 16, 1811**, the region around **New Madrid** suffered three great jolts, more than a dozen large **aftershocks**, and thousands of small, but unnerving, tremors that kept the ground shaking like Jell-O.

The **New Madrid** quakes ranked as the largest series of shocks in North America's recorded history. They **rattled people** as far away as New York City, nearly 1,500 kilometers to the northeast. Yet because the **earthquakes** originated in a sparsely inhabited region well before the time of modern **seismometers**, they inhabit a netherworld between myth and fact. According to some tales, the **quakes** created waterfalls in the Mississippi and caused the great river to **run backward** for 3 days.

Although no **instruments** recorded the **New Madrid** quakes, **seismologists** can **estimate their size** by mapping the extent of damage and the area over which people could feel the vibrations. Such calculations set the **three principal shocks**, on **December 16, 1811**, January 23, 1812, and **February 7, 1812** at about **magnitude** 8.0, qualifying them as **great quakes**. Ten of the aftershocks equaled or exceeded magnitude 6.0, with three reaching magnitude 7.0 major shakes in their own right. The greatest occurred Feb 7, 1812 and was estimated to be 8.8 (I plan to visit this epicenter on our tour). Now that will definitely knock your socks off.



Based on maps in W. Atkinson, 1989, *The Next New Madrid Earthquake,*

Placing these jolts on a map has proved more difficult. Ever since the early part of this century, when geologists first started studying the **New Madrid quakes**, they have **struggled to identify the guilty faults**. Unlike the western United States, where many faults reach up to the surface, the eastern states hide most **quake-generating** structures beneath thick **blankets of sediment**.

Networks of seismometers set up in the **Missouri bootheel** and surrounding areas beginning in 1974 provided the first clues about the **invisible faults** in the region. Thousands of **microearthquakes** detected in the crust revealed a zigzag fault pattern roughly paralleling the course of the **Mississippi River** at the junction of Kentucky, Missouri, Tennessee, and Arkansas.

Only one of these faults is known to continue up to the surface, where it creates a steep slope, or **scarp** (the **Chickasaw Bluff**), alongside Tennessee's **Reelfoot Lake**. But at just 11 kilometers in length, the Reelfoot fault was always considered too puny to shoulder the blame for any of the major **New Madrid** earthquakes, says **Arch Johnston** of the **University of Memphis Center for Earthquake Research and Information (CERI)** (1996).

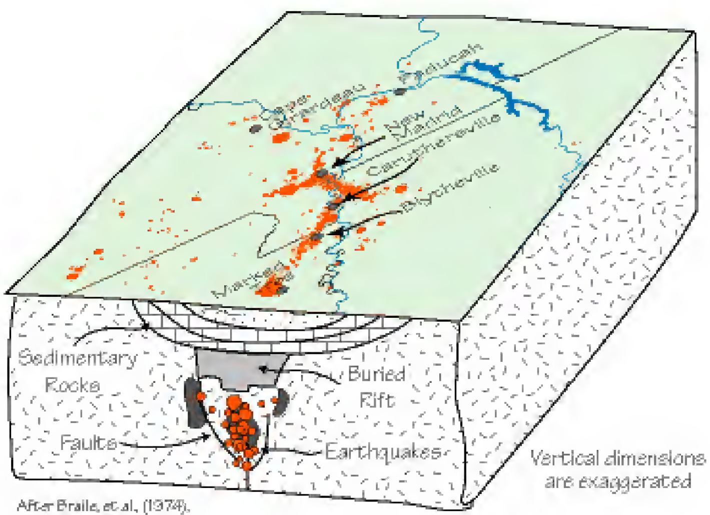
His Memphis colleague **Roy Van Arsdale** found evidence that the **Reelfoot fault** actually continues for at least three times its previously mapped length. While working in a region where the **Mississippi River** makes a loop called the **Kentucky Bend**, Van Arsdale found a **surface scarp** and subsurface warping that line up with the Reelfoot fault across the river. If the two scarps represent pieces of the same structure, the fault must stretch 32 km and possibly longer.

The sinuous Kentucky Bend crosses the Reelfoot fault at least two and probably three times. So when the fault sprang to life, it created different kinds of disruptions at several points along the river.

During the third great quake, on February 7, 1812 land to the southwest of the fault rose several meters relative to the land to the northeast. In one place where the river crossed the fault, the sudden vertical shift created an instant waterfall. At the two other crossings, the shift created barriers, causing the water to pool.

In some places, the river flowed backward (We will visit where this event occurred) and surged over its banks, with a great wave heading upstream. Although modern legends about the quakes say the river ran backward for days, contemporary accounts suggest the reverse flow continued for only a few hours. By daylight, the Mississippi River had worn through its barriers and reclaimed its former course.

Because the Feb. 7, 1812 quake reshaped the river so dramatically, Johnston and Schweig (1996) had little trouble linking that event with the Reelfoot fault. The matching game gets harder with the first and second great quakes, however, because they involved an unknown combination of perhaps six other faults.



After Braile, et al., (1974),
U. S. Geological Survey
Open File Report 84-770.

The general progression of the earthquake sequence is coming together, however, enabling scientists to distinguish actual events from apocryphal ones. That's important, says Johnston, because New Madrid's eight wild weeks are unique in recorded history. Great earthquakes typically strike along coastlines or within growing mountain belts, where two of Earth's surface plates collide. But the flat heartlands of continents tend to remain geologically quiet.

"This was the greatest sequence of earthquakes in a continental interior in the world, and so we want to understand it," says Johnston.

Only by probing the past can geoscientists hope to forecast when a New Madrid quake will strike again.

A tremor in the Louisville area was felt in the early morning hours of April 18, 2008, and was directly related to the New Madrid Fault Seismic Zone. There are fissures that snake up from the water line of the Wabash River, looking to the untutored eye like gaps where erosion accelerated. But they tell a story of ancient cataclysmic events that rumbled into what is now Kentucky with a force not seen here in recorded history. The discovery of these cracks by a U.S. Geological Survey scientist in the mid-1980s changed ideas about a fault system that can resonate all the way to Louisville (and farther) as evidenced by the April 18, 2008 jostle from a 5.2 magnitude quake and more than 150 aftershocks. The Wabash Valley Seismic Zone, a loosely defined region of quake activity in southern Indiana and Illinois, could be Louisville's biggest earthquake threat, erupting every decade or two with magnitude 5 quakes, and capable of tremors 1,000 times more energetic, like the ones that produced these cracks in the riverbank.

The riverbank cracks that reveal the Wabash Valley to be a major quake zone are born of movement deep in the earth: Picture giant slabs of rock miles below us, butting against each other like bulls battling for dominance until, finally, one begins to give way. Its mass grinds against its counterpart, sliding along its stony flanks for inches and then feet in a rumbling heave. The movement triggers turbulent shifting of the stone above. Miles of rock slide and shuffle to accommodate this changing basement. Nearer the surface, growing pressure forces water-saturated sand into a roiling slurry that squirts through every crack and crevice. Some of this liquefied sand discovers paths through the clay above and shoots through the earth. Across the landscape sand geysers jet skyward, sometimes 20-30 feet.

In addition, seismic waves amplify in some soils, and parts of Louisville, where water-saturated sand, silt, or gravel make for an unstable foundation, are vulnerable, especially along the Ohio River and, to a lesser degree, in the 1937 floodplain west of Interstate 65.

But mid-continent earthquakes big enough to shake buildings are rare. Since 1900, the U.S. Geological Survey has recorded five quakes of magnitude 4 or 5 from the vicinity of Wabash Valley. Compare that to the West Coast, with some 20 quakes of magnitude 6 or greater since 2000. The reason for this disparity is simple: The West Coast is the leading edge of one **tectonic plate** ramming into another.

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Berl Meyer *is the current Geology Coordinator for KSNH, the former KSNH webmaster, and the current webmaster of the* ***U.S.S. Constitution CVA/CV 64 website****. Berl was stationed on this Naval Aircraft Carrier during the Vietnam War as an Aerographer (weather guesser).*

MONOTROPA UNIFLORA L., 1753 (INDIAN PIPE)

by Chris Bidwell

Although often mistaken for a **fungus** because it is white, has a waxy feeling, has no **chlorophyll**, and grows in dark/damp woods, ***Monotropa uniflora*** **L.**, 1753 (**Indian pipe**) is really a flowering plant. It is a non-green, **herbaceous perennial** in the **Monotropaceae** family of plants. Some texts treat it in the **Ericaceae** (Heath) family. ***Monotropa hypopithys*** L., 1753 (**pine sap**) and ***Monotropsis odorata*** Schwein. ex Ell., 1817 (**sweet pinesap** or **pygmypipes**) are the only other representatives in this family in Kentucky. Indian pipe grows in shady, rich, dry to mesic woods usually arising out of decayed wood and leaves across Kentucky from June into August. It has a wider range of distribution than most any modern plant, indicating that it evolved during the **Jurassic Period** before the **supercontinent** (**Laurasia**) **separated**. **Indian pipe** is found in South America, Japan, China, India, and southern Asia and therefore qualifies as a transcontinental plant.

The plant, whitish in color, with an occasional pink tinge and/or black specks stands 3-10 inches tall. Small **sessile**, linear, fleshy scales/leaves dot the stem. The single five-petaled **flower** is hermaphroditic (having both male and female organs). The 1-inch long flower nods at first and becomes upright with maturity to better disperse its seeds. The seed capsule/pod that forms is 5-celled and 5-valved and splits open in late summer to release hundreds of miniscule seeds that are wind and insect dispersed. Small bumble bees, being the primary pollinator/disperser are attracted to the plant's nectar and pollen. Indian pipe's roots are a dark colored fibrous mass about as large as a chestnut bur. Depending on the plant's stage of development it possesses no odor, a sweet-earthy aroma, or a rank, pungent/rotting odor. The plant turns black with age and can remain standing into the next spring.

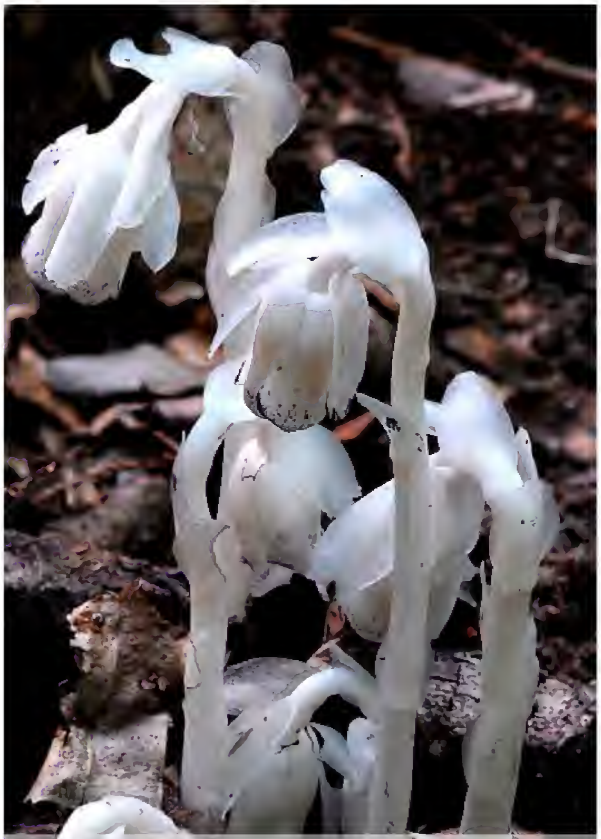
Carl von Linné a.k.a. Carolus Linnaeus as painted by Alexander Roslin in 1775 (from Wikipedia).

Indian pipe is known by **many common names**: bird's nest plant, convulsion plant, **corpse plant**, death plant, eye bright, fairy smoke, fit plant, **ghost of the forest**, **ghost plant**, ice plant, ova-ova, pipe plant, **wax flower**, and white horse/knight. Based on the plant's color, medicinal usage, how its seeds are dispersed, its Indian names, how it reacts when handled (it tends to dissolve); its shape, texture, and structure give credence to these common names.

The generic epithet *Monotropa* comes from the Greek *monos*, “one”, and *tropos*, “direction”, in reference to the flowers which turn to only one side. The specific epithet, *uniflora*, is from Latin, “one flower”, and refers to the plant’s having only one flower per stem. **Carolus Linnaeus** gave Indian pipe its current **binomial name**.

Cherokee Indians give an interesting origin of Indian pipe:

> ”Before selfishness crept into the world – that was a long time ago – the Cherokee people were happy and peaceable. They used the same hunting grounds and fishing grounds as their neighbors. They fished in the same streams and hunted in the same stands of forest. There were no arguments about boundaries and there were no arguments about fishing rights. But this was before Man became greedy. All this changed when Man learned to quarrel.


Monotropa uniflora L., 1753 (Indian pipe) - Susan Wilson

> The first quarrel that arose was between the Cherokee and a neighboring tribe. It was a long and bitter quarrel, so bitter that the chiefs of the two tribes decided to meet in council to try and settle their trouble. And so they met, one day, and they smoked the peace pipe in solemn council, but they did not stop quarreling. A puff on the peace pipe and a bitter word was the way it went. Days passed and still the council sat and smoked and quarreled.
>
> Now the Great Spirit was much displeased that the Indians should quarrel while smoking the pipe of peace. And the Great Spirit said, ‘I shall have to do something to you men that will show you that People should live together in peace, and that when Indians smoke the pipe, it must be done in peace.’
>
> The Great Spirit looked down at the old Men sitting in all that smoke. And he saw how gray they looked and how their heads hung down in weariness because it had been many nights since they had slept. And so he turned the old Men who smoked there in the council into small silvery gray flowers, their heads bent over and their petals hoary.
>
> If you should find one in the woods and turn it so that the head is down and the stem up, you will see that it looks like an Indian pipe, and so it is called to this day. But in the woods where they are often seen clustered together, they appear to be little gray people sitting in long council.
>
> Now after the Great Spirit had changed the quarreling Indians into flowers and set them out in the forest, he noticed that the smoke from their pipes still hung heavy in the air above the place where the council had been. So he gathered up the smoke and draped it over the mountains as a reminder. And he left it there until such time as all Men shall learn to live peace together.”

Indian pipe is referred to by some authorities as a **saprophyte** (feeding off decayed matter). It is now known that Indian pipe is one of some 3000 non-photosynthetic plants. It is heterotrophic. A **saprophyte** must be able to directly absorb nutrients from the decaying matter and Indian pipe cannot do so. Indian pipe absorbs nutrients, water, and minerals from the **mycorrhizal** fungi that are attached to roots of beech, oak, and pine trees. This obligate fungus/plant relationship is **termed** as a **mycorrhizal**, **epiparasitic**, **mycoheterotrophic**, **mycotrophic**, or **mycoparasitic** relationship. The fungus takes nutrients from the tree roots and the Indian pipe, in turn, takes its nutrients from the fungus. As both the fungus and Indian pipe may contribute phosphorus back to the tree, it is not considered a pure **parasitic relationship**. The **fungi** that form this plant/fungal symbiosis are primarily in the ***Russula*** and ***Lactarius*** species of mushrooms. Because of Indian pipe’s **mycorrhizal host dependence**, it is difficult to propagate or transplant.

Indian pipe had or has many usages. The **poet** **Emily Dickinson** called Indian pipe "**the preferred flower of life**". The whole plant can be cooked and supposedly tastes like asparagus. It is tasteless if eaten raw. Medicinal usages are: antibacterial, antispasmodic, fever reducer, hypnotic, sedative, for toothaches, eye sores, and warts. Root infusions were used as an antispasmodic, hypnotic, and/or sedative. It was also used to treat seizures ("fits"), fainting spells, and various "nervous" conditions. Native Americans used Indian pipe for eye problems - the stem was crushed and the clear sap was applied to the eye. The clear sap/stem juice also was used to treat convulsions and muscle spasms. It has been suggested that Indian pipe may have been used as an opium-like substitute. The entire crushed plant was rubbed on warts and bunions. Fever and colds were treated with an infusion of the delicate leaves. A poultice was used on difficult to heal sores. Chewed flowers were used to treat toothaches. The clear, watery sap/stem juice is said to be bactericidal. Lastly, mixed with fennel, Indian pipe was used as a douche! As always never use a plant for culinary or medicinal usage unless absolutely sure it is safe. Besides, a native plant as pretty and distinguished as Indian pipe should be admired and not disturbed.

This summer while hiking, look for our **Indian pipe** in the shadows of our forests. The "Ghost of the Forest" (my favorite name for **Indian pipe**) is always a treat to see and to photograph. Have a great summer!

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***Chris Bidwell** is an amateur naturalist and the current President of the Falls of the Ohio Chapter of KSNH.*

NOTES FROM THE HORNER WILDLIFE SANCTUARY ODONATE TRIP

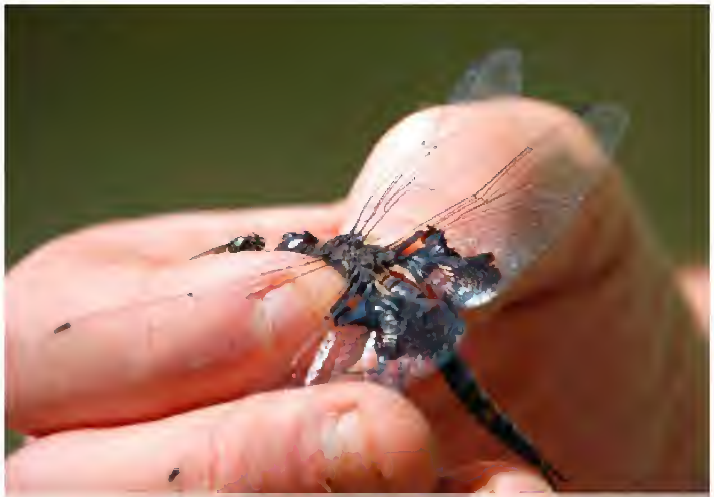
by Paul Florence

On Saturday June 6th 2009, twelve people participated in the KSNH Odonate Filed Trip to Horner Wildlife Sanctuary in Oldham County, Kentucky to observe and collect dragonflies and damselflies. Those in attendance were Ethel Wilkerson, Hannah Helm, Kay Harker, Deb White, Margarette Perkins, Chris Knopf, Kathy Dennis, Dorothy Danak, Barry Nichols, Anissa Florence, Paul Florence, and Emma Wilson. The weather cooperated nicely, it was sunny and in the low to mid 80's.

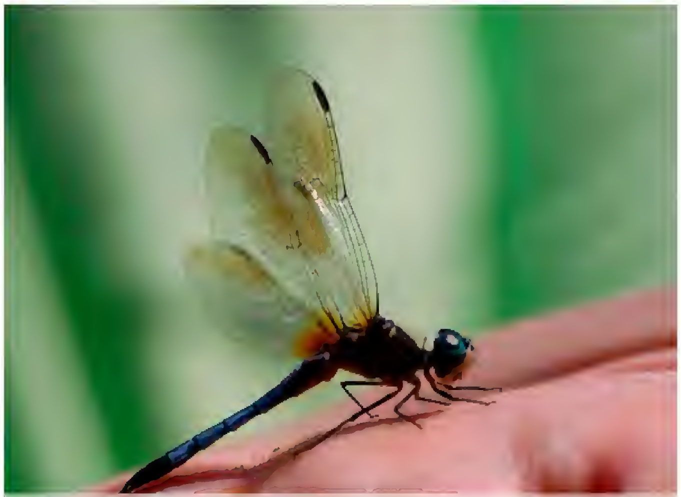
Paul Florence addresses the attendees of the odonate field trip - Barry Nichols, 2009

Some of the group catches dragonflies and damselflies at the lowland pond at the Horner Wildlife Sanctuary in Oldham County, KY - Barry Nichols, 2009

There were three habitats at Horner that were searched for odonates (dragonflies and damselflies). The first was a small, shallow pond that is heavily guarded by plants. The surface of the pond is mostly covered by water lilies and there is a lot of plant growth within the pond itself. At this pond we observed a few damselfly adults. These were members of the pond



***Pachydiplax longipennis* (Burmeister, 1839) (blue dasher) male - Chris Knopf, 2009**

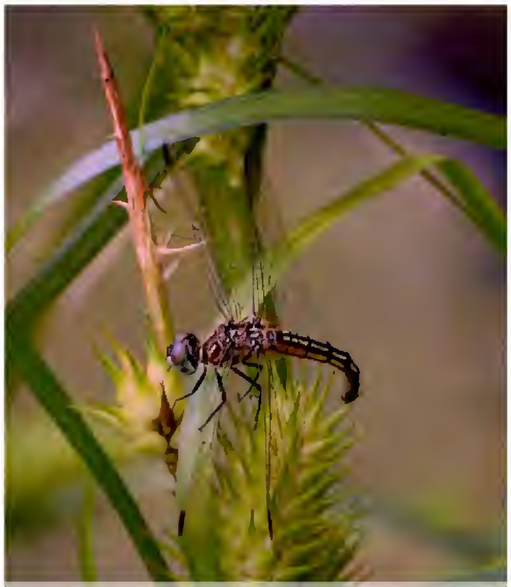


***Pachydiplax longipennis* (Burmeister, 1839) (blue dasher) female - Chris Knopf, 2009**

damselfly family, **Coenagrionidae**. It would have required collection and lab identification on my part to get a complete identification on these damsels. We also collected and identified female and male ***Pachydiplax longipennis*** (Burmeister, 1839) (blue dasher) dragonflies at this pond. The first female that was netted began laying eggs in my hand. Also at the small pond we dredged up a few dragonfly naiads (larvae) and damselfly naiads. Of special, non-odonate interest, we also dredged up a large aquatic beetle (**Dytiscidae**) larva. This beetle larva was about 3 inches long with very large, strong mandibles as a couple of us found out quickly!

The crew was visited by a 6.5 foot *Elaphe obsoleta* (black rat snake) - Barry Nichols, 2009

On the way to a trail we needed to use to get to the next habitat, someone caught a male ***Libellula lydia*** Drury, 1773 (**common whitetail**). This species shows sexual dimorphism, males and females have unique color patterns and wing markings. The males, including the one we caught, have a white abdomen while the females do not.



Tramea lacerata **Hagen, 1861 (black saddlebags) - Chris Knopf, 2009**

The second habitat we studied was a large lowland pond. This pond is much more open, consequently there were many more adult dragonflies flying around. In addition to seeing more common whitetails we caught and/or observed ***Libellula pulchella*** Drury, 1773 (**twelve spotted skimmers**), ***Libellula luctuosa*** Burmeister, 1839 (**widow skimmers**), ***Tramea lacerata*** Hagen, 1861 (**black saddlebags**), ***Anax junius*** (Drury, 1773) (**common green darners**), and another pond damselfly (**Coenagrionidae**). A few of us saw a pair of black saddlebags flying in a mating tandem.

While poking around a field in between this pond and our next habitat, a branch of Harrods Creek, Barry found an ***Hetaerina americana*** (Fabricius, 1798) (**American rubyspot**) damselfly. At the stream we saw ***Calopteryx maculata*** (Beauvois, 1805) (**ebony jewelwing**) damselflies and a few pond damsels flying around but did not see any dragonflies. Also at the stream, Barry caught a small ***Nerodia sipedon*** (Linnaeus, 1758) (**northern water snake**) and Kathy Dennis caught a real nice ***Elaphe obsoleta*** (Say in James, 1823) (**black rat snake**) that was 6.5 feet long.

Overall the trip was a great time. It was a little early in the year to see lots of adult odonates, but it was fun trying to catch and observe the ones that were flying.

Paul Florence *is an Associate Professor of Biology at* ***Jefferson Community & Technical College****. He worked on habitat preferences of dragonflies at* ***Bernheim Forest*** *for his MS thesis research at the* ***University of Louisville Biology Department*** *and is the current Invertebrate Coordinator for KSNH.*

FALLS OF THE OHIO CHAPTER NEWS by Chris Bidwell - Falls of the Ohio Chapter President

Falls of the Ohio Chapter Events (see front cover for regular meeting times and place, field trip times may be found below or are to be determined. Contact Chris Bidwell for more information.

2009 Dates	Event/Speaker	Topic / Outing	Photo Contest Topic
September 17	Meeting: Dr. Mark Wourms	Tentative Topic: Bernheim Forest	Moths & Butterflies
September 19	Field Trip: TBD	TBD	
October 15	Meeting: Dr. Art Parola	Stream Restoration	Halloween's Patterns & Colors in Nature
October 17	Field Trip: Carl Suk	Jefferson County Memorial Forest & Non-Native Invasive Plants	
November 19	Meeting: TBD	TBD	A Fall Leaf (single leaf)
November 21	Field Trip: TBD	Muscatatuck National Wildlife Refuge	
December 17	Annual Dinner:	TBD	none

FALL 2009 NEWSLETTER PHOTO CONTEST: THE TOPIC IS "FALL COLOR"

Pine Mountain Settlement School - Chris Bidwell

The Fall 2009 Newsletter Photo Contest had 10 judges.

Newsletter Photo Contest Topic for Winter 2009

Kentucky Winter Bird Residents,

Red River Gorge - David Becker, 2006

Leaves on aster - David Becker, 2006

Jenny Riley Lake ripples - David Becker, 2006

…Newsletter Photo Contest, continued from page 79…

KENTUCKY SOCIETY OF NATURAL HISTORY ANNUAL FALL CONFERENCE
REELFOOT LAKE, TIPTONVILLE, TENNESSEE
OCTOBER 8 - 11, 2009

- **Reelfoot Lake is located within the Central Time Zone**
- **All drive times are estimated and for one way, starting from Cypress Point Resort**

Field Trip Ratings:

Easy: Hiking short distances usually on trails with little slope.
Moderate: Generally easy with a comfortable pace. Participants must be able to negotiate occasional steep slope and/or rough trail.
Strenuous: More endurance required to negotiate longer stretches of steep slopes, sections of rough and/or no trail.

*** **Be careful** on all of the field trips and watch your step. **Watch out** for venomous snakes and poison ivy, and soft muddy surfaces in and around wetlands. **Be safe** and have a great fall Conference.

Thursday, October 8, 2009

5:00 Dinner – Lakeview Dining Room (across the street from Cypress Point Resort)

7:30 Evening Presentation – "Introduction to the New Madrid Seismic Area" – Berl Meyer

Friday, October 9, 2009

9:00 – 4:30 Earthquake Alley Motorcade – Participants on this trip will carpool for 89 miles through the Mississippi River basin with stops at various sites of interest, including Earthquake landforms, New Madrid Historical Museum, and Big Oak Tree State Park. The New Madrid Historical Museum reflects the history of this river town from the Mississippian period up through the early 20th century, including the great earthquakes of 1811 and 1812. After lunch participants will stop at Big Oak Tree State Park which is an island of trees within the expansive farmland of southeastern Missouri. Trees within the park are unsurpassed in the state for size, with five qualifying as state champions of their species and two registered as national champions. A boardwalk traverses through the park, providing access to the park's unique landscape. An interpretive center near the boardwalk provides educational displays explaining the natural history of the park. With more than 150 species of birds, several considered rare in the state, the park is a favorite with bird watchers.

Drive Time – 90 minutes (carpooling) Rating – easy Trip Leader – Berl Meyer

5:00 Dinner – Lakeview Dining Room (across the street from Cypress Point Resort)

6:00 – 7:30 Sunset Pontoon Boat Trip on Reelfoot Lake (An additional cost of $6.00/person is required for boat rental) – Experience beautiful Reelfoot Lake during sunset (approx. 6:30 p.m. CT) while relaxing on guided pontoon boat trips. According to Tennessee State Park's Regional Naturalist, this trip provides a great opportunity to see some of the lake's diverse bird fauna and shoreline vegetation.

Drive Time – < 15 minutes Rating – easy Trip Leader – David Haggard

8:00 Evening Program Starts: Cypress Point Conference Room

Welcome and Introductions – Joe Settles

Children's Program Topics – Jeff Foster

Photography Program Topic – Topic for fall meeting will be "**Kentuckiana Lakes**" – Chris Bidwell

Featured Presentation – "Reptiles and Amphibians of Western Kentucky" – John MacGregor, or James Kiser

Saturday, October 10, 2009

Morning Field Trips

9:00 – 12:00 New Madrid Loop Tour and Reelfoot Lake State Park's R.C. Donaldson Memorial Museum – Participants on this trip will drive the New Madrid Loop and visit Reelfoot Lake State Park's Museum with KSNH's Geology Coordinator. The museum features natural and cultural exhibits of the area, audio visual programs, and a cypress boardwalk. The park's nature center houses various non-releasable raptors, some snakes, and other wildlife of the area. The New Madrid Loop will provide opportunities to see earthquake landforms, location where the Mississippi River ran backwards, sites of temporary waterfalls, Tiptonville Horst, Island #10 Civil War battle site, and Bessie's Point.

Mississippi Green Water Snake (*Nerodia cyclopion*), Fulton Co., KY – J. Kiser

Drive Time – 30 minutes Rating – easy Trip Leader – Berl Meyer

9:00 – 12:00 Reelfoot Lake National Wildlife Refuge Area – Reptiles, Amphibians, Plants, and Other Organisms at Long Point – Visit one of Kentucky's unique natural wetlands and search for rare snakes and plants. Cover boards and other reptile and amphibian traps will be checked at the site in attempt to locate the rare western ribbon snake (*Thamnophis proximus proximus*), Mississippi green water snake (*Nerodia cyclopion*), and broad-banded water snake (*Nerodia fasciata confluens*). Participants will need to be prepared to wade through shallow water while looking for wetland plants, including the rare supple-jack (*Berchemia scandens*) and American frog's-bit (*Limnobium spongia*).

Highlights may include a diverse fall wetland wildflower assemblage, snakes, turtles, and wetland birds.

Drive Time – 30 minutes **Rating – moderate** **Trip Leader – James Kiser**

9:00 – 12:00 Reelfoot Lake State Park's Keystone Trail – Participants on this trip will traverse a level trail along the shoreline of Reelfoot Lake while learning about the lake and associated wetlands. This trail provides a great opportunity to view some of the fall blooming plants and birds that inhabit the aquatic environments. Highlights may include osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), various waterfowl, and shore birds.

Bald Eagle (*Haliaeetus leucocephalus*), Hamilton Co., OH – J. Kiser

Drive Time – <15 minutes **Rating – moderate**
Trip Leader – David Haggard

12:00 – 1:00 Lunch

Afternoon Field Trips

1:00 – 4:30 Reelfoot Lake State Park's Black Bayou Trail -This trail extends through some of the region's nicest cypress forest. Participants on this trip will learn about the birds, reptiles and plants that call these wetlands their home. Highlights will include a diverse fall flora and bird community.

Drive Time < 15 minutes **Rating – moderate** **Trip Leader – David Haggard**

1:00 – 4:30 Reelfoot Lake National Wildlife Refuge Area – Walnut Log Botanical Excursion – This trip will focus on the fall blooming wetland plants of the forest and openings in the Walnut Log portion of the refuge. Participants may want to be prepared to get their feet wet. Much of this trip will be along the old road bed and ditches but some off road/trail hiking may be required to observe various plants.

Drive Time – <15 minutes **Rating – easy/moderate** **Trip Leader – Chris Bidwell**

1:00 – 4:30 Fish Pond Herping Trip & Indian Mound – This excursion will focus on the reptiles and amphibians that occur in small isolated natural wetlands along the Mississippi River. Participants will need to be prepared to get their feet wet because this site has no trails and much of the searching will occur along the edges of water. Discarded metal and other unnatural cover will be flipped while searching for reptiles and amphibians. Participants will be able to view a large Indian mound located on a farm adjacent to Fish Pond. Highlights may include the western mud snake (*Farancia abacura reinwardtii*), broad-banded water snake (*Nerodia fasciata confluens*), and various other snake, turtle, frog, and salamander species.
Drive Time – 30 minutes **Rating – easy/moderate** **Trip Leader – Joe Settles**

Western Mud Snake (*Farancia abacura reinwardtii*), Fulton Co., KY – J. Kiser

5:00 Dinner– Lakeview Dining Room (across the street from Cypress Point Resort)

6:30 Evening Program:

Welcome and Introductions – Joe Settles

Review of Saturday Field Trips – Moderator – James Kiser

Children's Program Awards – Jeff Foster

Student Presentation - "**Assessment of Carabid Beetles in Various Seed Mixture Plantings Along a Disturbance Corridor in Lawrence County, Kentucky**" - Michelle Staley

Featured Presentation – "Rare and Uncommon Invertebrates of Western Kentucky" – Ellis Laudermilk

Naturalist of the Year Presentation – Joe Settles & Wally Roberts

Preview of 2010 Spring Conference at Shawnee State Park in Southern Ohio – Jeff Foster

Photography Competition & Awards – Chris Bidwell

Business Meeting & General Topics – Open to All

Door Prizes – Cherry Baker

Broad-banded Water Snake (*Nerodia fasciata confluens*), Fulton Co., KY – J. Kiser

Sunday, October 11, 2009

7:00 Board Meeting – All board members are encouraged to attend

9:00 – 12:00 Black Bayou Refuge Birding/Herping – Participants will join past Naturalist of the Year on a trip to a large wetland complex in search of birds, reptiles, and amphibians. This area contains a variety of wetland environments, a board walk, and mud-flats allowing excellent views of a variety of wetland dependent birds. Participants will see a variety of birds, reptiles, and amphibians.
Drive Time – 15 minutes **Rating – moderate** **Trip Leader – Scott Shupe**

9:00 – 12:00 Reelfoot Lake National Wildlife Refuge Area – Reptiles, Amphibians, Plants, and Other Organisms at Long Point – Visit one of Kentucky's unique natural wetlands and search for rare snakes and plants. Cover boards and other reptile and amphibian traps will be checked at the site in attempt to locate the rare Western ribbon snake (*Thamnophis proximus proximus*), Mississippi green water snake (*Nerodia cyclopion*), and broad-banded water snake (*Nerodia fasciata confluens*). Participants will need to be prepared to wade through shallow water while looking for wetland plants, including the rare supple-jack (*Berchemia scandens*) and American frog's-bit (*Limnobium spongia*). Highlights may include a diverse fall wetland wildflower assemblage, snakes, turtles, and wetland birds.

Drive Time – 30 minutes Rating – moderate Trip Leader – James Kiser

The Kentucky Society of Natural History would like to thank the following field trip leaders/speakers and their respective employers.

Chris Bidwell	**Kentucky Society of Natural History**
David Haggard	**Tennessee State Parks**
James Kiser	**Stantec Consulting Services**
Ellis Laudermilk	**Kentucky State Nature Preserves Commission**
John MacGregor	**Kentucky Department of Fish and Wildlife Resources**
Berl Meyer	**Kentucky Society of Natural History**
Joe Settles	**East Kentucky Power Cooperative**
Scott Shupe	**Consulting Environmental Educator/Author**
Michelle Staley	**Morehead State University**

Thanks for attending Kentucky Society of Natural History's Fall Conference and mark your calendars for the Spring Conference at Shawnee State Park, Southern Ohio on April 23 - 25, 2010.

NOTES FROM THE NATURE NUT

"Special Moments in Time: Memories of Thomas Divide& Kanati Fork Trails (October Photography and June Boars and Bears)

by W. H. (Wally) Roberts

Unless you are a nature photographer, you probably have never heard of it…more or less know its location. **Thomas Divide** is located in the Great Smoky Mountains National Park about three miles south of Newfound Gap off US 441 on the right.

Thomas Divide is widely renowned for its brilliant fall color which intensifies just before sunset in mid October. It is not uncommon to be caught in a "photography jam" if driving US 441 at this time. As many as 50 photographers often frequent this spot near a guardrail, with no paved parking, causing a dangerous traffic situation. Because of these "photography jams", the park service has begun a no-trim policy at this site blocking much of the previous view-shed.

Thomas Divide offers much more than fall color. It is also a great one-way hiking trail when combined with the **Kanati Fork Trail**. Two vehicles are required…one being left near **Smokemont** on US 441 and one being used to drive to the top of the mountain making this a downhill hike of about 6 miles. **The Thomas Divide** section of this hike is known for its high elevation plants, trees, and wildlife while the **Kanati Fork** section of the trail is known for its wildflowers.

A few years before I met Karen, Berl Meyer, Larry Houston, and I were camping at **Smokemont Campground**. We had asked Berl to also bring along his vehicle for the sole purpose of taking downhill hikes.

The night before our hike, it had rained steadily and the next morning, as we reached the trailhead, white puffy clouds were just rising above the ridge tops and it seemed as if you could reach out and touch them. The wind was out of the north -brisk but not too cool, and with much lower humidity.

We gathered our gear and headed down the trail amidst yellow birch and hemlock trees that were still dripping from the previous night's rain. Less than one hundred yards down the trail, we noticed our first wild boar tracks among the downed logs of ancient chestnut trees. Shortly afterwards, we began to hear snorting and smelling the scents of hog-like stench. As we rounded a curve in the trail, there they were not more than a few yards in front of us. As soon as the boars noticed our intrusion, they were gone into the green of the Smokies, as if they were never there, leaving only footprints, smells, and rustling brush.

As we hiked along the upper portion of the trail, there were several opportunities to stop and enjoy views on both sides toward Smokemont and Bryson City. At 1.8 miles, we reached the Kaneti Fork Trail and descended 2.9 miles through a steep valley filled with wildflowers and many large specimens of various native trees.

The closer we got to US 441, the highway sounds increased in volume until, suddenly, we stepped from the forest into a grassy opening near the parking space where Berl had left his Bronco II. We decided to forego our trail lunch until we reached my vehicle at the top of the mountain.

Upon arrival at the top, I grabbed my gear and headed to my vehicle where we planned to eat our lunch at a nearby picnic table. I removed my lunch from the backpack, leaned back against my vehicle's hood, and opened my water bottle. Berl and Larry were sorting their lunches several yards away. As I took a long drink, I spotted some umbrella leaf and cow parsnip growing about five yards away.

It was then that I heard rustling noises and swaying of plants. I knew it was an animal but never suspected what I saw next. First out of the bushes emerged a wild boar piglet not weighing twenty pounds. Within seconds, out jumped a mature black bear weighing about 250 pounds. Neither the predator nor hog prey noticed me and it occurred quickly and ghostly. The piglet was focused on survival and the bear on his next meal. Both were gone in an instant and neither Larry nor Berl noticed anything out of the ordinary.

This unique moment in time is burned into my memory as though it happened yesterday, not thirty years ago. Time passes and things change, but special memories are like blessings that we carry with us forever. Hope to see you at Reelfoot Lake in October. Until then, continue to enjoy the many beauties of nature.

BIRDING REPORT FROM THE KSNH 2009 SPRING MEETING AT PINE MOUNTAIN SETTLEMENT SCHOOL

by Pat Meyer

An enthuisastic group of about 30 members, from novice to experienced, met field trip leader, Ben Begley, early in the morning on April 24 to bird about the Pine Mountain Settlement School campus. The following bird list also includes birds that were reported from other field trips during the conference (Order: Family, Species).

Ciconiiformes: Ardeidae
Ardea herodias L., 1758 (great blue heron)

Columbiformes: Columbidae
Zenaida macroura L., 1758 (mourning dove)

Strigiformes: Strigidae
Strix varia Barton, 1799 (barred owl)

Caprimulgiformes: Caprimulgidae
Caprimulgus vociferus A. Wilson, 1812 (whip-poor-will)

Apodiformes: Apodidae
Chaetura pelagica (L., 1758) (chimney swift)

Piciformes: Picidae
Melanerpes carolinus (L., 1758) (red-bellied woodpecker)
Picoides pubescens (L., 1766) (downy woodpecker)

Passeriformes: Tyrannidae
Sayornis phoebe (Latham, 1790) (eastern phoebe)

Passeriformes: Vireonidae
Vireo solitarius (Wilson, 1810) (blue-headed vireo)
Vireo olivaceus (L., 1766) (red-eyed vireo)

Passeriformes: Hirundinidae
Stelgidopteryx serripennis (Audubon, 1838) (northern rough-winged swallow)

Passeriformes: Paridae
Poecile carolinensis (Audubon, 1834) (Carolina chickadee)
Baeolophus bicolor (L., 1766) (tufted titmouse)

Passeriformes: Troglodytidae
Thryothorus ludovicianus (Latham, 1790) (Carolina wren)

Passeriformes: Regulidae
Regulus satrapa Lichtenstein, 1823 (golden-crowned kinglet)

Passeriformes: Turdidae
Sialia sialis (L., 1758) (eastern bluebird)
Turdus migratorius L., 1766 (American robin)

Passeriformes: Parulidae
Parula americana (L., 1758) (northern parula)
Dendroica petechia (L., 1766) (yellow warbler)
Dendroica pensylvanica (L., 1766) (chestnut-sided warbler)
Dendroica caerulescens (Gmelin, 1789) (black-throated blue warbler)
Dendroica virens (Gmelin, 1789) (black-throated green warbler)
Dendroica castanea (A. Wilson, 1810) (bay-breasted warbler)
Mniotilta varia (L., 1766) (black-and-white warbler)
Helmitheros vermivorus (Gmelin, 1789) (worm-eating warbler)
Seiurus motacilla (Vieillot, 1809) (Louisiana waterthrush)
Wilsonia citrina (Boddaert, 1783) (hooded warbler)

Passeriformes: Thraupidae
Piranga olivacea (Gmelin, 1789) (scarlet tanager)

Passeriformes: Emberizidae
Pipilo erythrophthalmus (L., 1758) (eastern towhee)
Spizella passerina (Bechstein, 1798) (chipping sparrow)
Melospiza melodia (A. Wilson, 1810) (song sparrow)

Passeriformes: Cardinalidae
Cardinalis cardinalis (L., 1758) (northern cardinal)
Pheucticus ludovicianus (L., 1766) (rose-breasted grosbeak)

Passeriformes: Fringillidae
Carduelis pinus (A. Wilson, 1810) (pine siskin)

***Pat Meyer** has been a resident of Louisville her entire life. She retired from the Postal Service as a branch manager in 1999. She has been interested in nature her entire life and says KSNH, 'was a "natural" place for me'.*

KENTUCKY NATURALISTS' CALENDAR

(added as space and time allow)

September 30, 2009: Fossil Bed Hikes @ Falls of the Ohio State Park, 201 W. Riverside Drive, Clarksville, Indiana 47129 (12:30 a.m.). Restricted to ages 12 and up. Paul Olliges leads a strenuous three-hour hike to the outer fossil beds at the Falls. Access depends upon river level. Therefore, please call the Falls of the Ohio office the day before. Groups meet on the Interpretive Center deck. Contact the park at (812) 280-9970, or via email at park@fallsoftheohio.org, or visit their website at http://www.fallsoftheohio.org.

August 12, 2009: Perseid Meteor Shower @ Cumberland Falls State Park, 7351 Highway 90, Corbin, KY 40701-8857. Contact Naturalist Steve Gilbert via email at steve.gilbert@ky.gov or Naturalist Bret Smitley via email at breta.smitley@ky.gov. You can also reach them at **Cumberland Falls State Park** via phone at (606) 528-4121.

October 3, 2009: Fossil Bed Hikes @ Falls of the Ohio State Park, 201 W. Riverside Drive, Clarksville, Indiana 47129 (10:00 a.m.). Restricted to ages 12 and up. Paul Olliges leads a strenuous three-hour hike to the outer fossil beds at the Falls. Access depends upon river level. Therefore, please call the Falls of the Ohio office the day before. Groups meet on the Interpretive Center deck. Contact the park at (812) 280-9970, or via email at park@fallsoftheohio.org, or visit their website at http://www.fallsoftheohio.org.

October 3, 2009: Canoe Hikes @ Falls of the Ohio State Park, 201 W. Riverside Drive, Clarksville, Indiana 47129 (9:30 a.m. - 12:00 p.m.). Paddle the Falls of the Ohio area with interpretive naturalists while discovering wildlife and seldom-seen fossils. Rent a canoe or kayak from http://www.canoeky.com. Contact the park for current information at (812) 280-9970, or via email at park@fallsoftheohio.org, or visit their website at http://www.fallsoftheohio.org.

October 8-11, 2009: Kentucky Society of Natural History 2009 Fall Meeting @ Reelfoot Lake. See meeting agenda on page 70. Registration form included in this newsletter and available online at http://www.ksnh.org/reelfoot_reg.tiff.

October 10, 2009: Raptor Day @ Falls of the Ohio State Park, 201 W. Riverside Drive, Clarksville, Indiana 47129 (10:00 a.m.-4:00 p.m.). Learn about birds of prey at the annual Raptor Day at the Falls. Activities include live raptor viewing and programs (10:00 a.m. and 1:00 p.m.), wild bird watching with interpreters, and owl pellet investigations, and hikes in the National Wildlife Conservation Area. Sponsored by the Falls of the Ohio Archaeology Society. Free with regular admission to the Interpretive Center ($4/adults, $1/children Monday-Thursday; $5/adults, $2/children Friday-Sunday and major holidays). Contact the park at (812) 280-9970, or via email at park@fallsoftheohio.org, or visit their website at http://www.fallsoftheohio.org.

October 16-18, 2009: Fall Color Weekend @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. Fall Color Weekend at Pine Mountain Settlement School offers activities for people of all ages. Features include hikes, multi-media presentations, and the opportunity to enjoy some of Kentucky's most beautiful natural areas and stunning autumn foliage. Fee based. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

October 17-18, 2009: Clark Festival @ Falls of the Ohio State Park, 201 W. Riverside Drive, Clarksville, Indiana 47129 (10:00 a.m.-4:00 p.m.). Features include an early 1800's reenactment commemorating the life of George Rogers Clark. The event will be held at the George Rogers Clark Home site of the Falls of the Ohio State Park on Harrison Avenue. There will also be demonstrations by period craftsmen, historic games and music. Free with regular admission to the Interpretive Center ($4/adults, $1/children Monday-

Thursday; $5/adults, $2/children Friday-Sunday and major holidays). Contact the park at (812) 280-9970, or via email at park@fallsoftheohio.org, or visit their website at http://www.fallsoftheohio.org.

October 17, 2009: Canoe Hikes @ Falls of the Ohio State Park, 201 W. Riverside Drive, Clarksville, Indiana 47129 (9:30 a.m. - 12:00 p.m.). Paddle the Falls of the Ohio area with interpretive naturalists while discovering wildlife and seldom-seen fossils. Rent a canoe or kayak from http://www.canoeky.com. Contact the park for current information at (812) 280-9970, or via email at park@fallsoftheohio.org, or visit their website at http://www.fallsoftheohio.org.

October 18, 2009: 12th Annual Indiana Bluebird Society Meeting @ Quaker Haven Camp, 111 Ems D16c Lane, Syracuse, IN. There will be two featured speakers, Jerry Sweeten, Director of Environmental Studies at Manchester College and Dena Purcell with Wild Birds Unlimited in Fort Wayne, Indiana. Jerry will be speaking about birds native to Indiana and demonstrating the use of mist-netting to show how birds are captured to study and band. Dena will be presenting a program on the basic needs of birds and how to make your garden and yard more enticing to birds. In addition, there will be a panel discussion and question & answer session concerning bluebirds with time to hear from district coordinators with news from their districts. For more information, see the IBS website at http://Indianabluebirdsociety.org/ or contact Ted Vesa by phone at 260-248-8636 or via email at tjvesa@embarqmail.com.

November 6-8, 2009: Environmental Education Association of Indiana Annual Conference. 2009 Theme is "Fading Your Carbon Footprint: Living Sustainably in a Modern World." The conference will be held at Camp Alexander Mack, Milford, Indiana. There will be speakers, breakout sessions, field trips, entertainment, awards, and more. For more information contact Krista Daniels at (574) 875-7422 or via email at krista@elkhartcountyparks.org. You can also get additional details from the Environmental Education Association of Indiana (EEAI) website at http://www.eeai.org.

November 7, 2009: Fall Foliage Fiesta @ Audubon Museum, John James Audubon State Park, 3100 US 41 North, Henderson, KY 42420 (1:00 p.m. – 2:00 p.m.). How does nature transition from sunny, warm summer days to crisp and wintry conditions? During this PowerPoint presentation, visitors will peek inside nature's bag of seasonal tricks that allow for life to exist in seemingly unbearable conditions. Afterwards, take a walk outside and soak in the colors and sounds of Audubon State Park's most colorful season. Contact Julie McDonald at (270) 826-2247 or by email at juliea.mcdonald@ky.gov, or visit the park website at http://parks.ky.gov/findparks/recparks/au/ for more.

November 13-14, 2009: The 35th Annual Meeting of the Society of Kentucky Lepidopterists (SKL) @ Entomology Department, University of Kentucky, Lexington, Kentucky. For details see the SKL website at http://bioweb.wku.edu/faculty/Marcus/KYLeps.html.

2010:

January 29-30, 2010: Sandhill Crane Weekend Event @ the Stonehaven Room at Barren River Lake State Resort Park lodge, 1149 State Park Road; Lucas KY 42156. Call (270) 646-2151.

February 12-15, 2009: Great Backyard Bird Count. For details, see the GBBC website at http://www.birdsource.org/gbbc/, or contact the Cornell Lab of Ornithology at http://www.birds.cornell.edu/ or by phone at (800) 843-BIRD, (800) 843-2473.

February 19-20, 2010: Sandhill Crane Weekend Event @ the Stonehaven Room at Barren River Lake State Resort Park lodge, 1149 State Park Road; Lucas KY 42156. Call (270) 646-2151.

April 23-25, 2010: Kentucky Ornithological Society's Fall Meeting. Jenny Wiley State Resort Park. For more information contact the Kentucky Ornithological Society at P.O. Box 463, Burlington, KY 41005, or via their website at http://www.biology.eku.edu/kos/default.htm.

April 2010 TBA: Kentucky Society of Natural History 2010 Spring Meeting @ Shawnee State Park, Ohio. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

Fall 2010: Kentucky Ornithological Society's Fall Meeting @ Paducah/Ballard Wildlife Management Area (dates to be announced). For more information contact KOS at P.O. Box 463, Burlington, KY 41005 or via their website at http://www.biology.eku.edu/kos/default.htm.

Fall 2010 TBA: Kentucky Society of Natural History 2010 Fall Meeting @ Shakertown National Historic Landmark. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

2011:

April 15-17, 2011: Kentucky Society of Natural History 2009 Spring Meeting @ Carter Caves State Resort Park, 344 Caveland Dr, Olive Hill, KY 41164, [(606) 286-4411]. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

April 29-May 1, 2011: Kentucky Ornithological Society (KOS) Annual Spring Meeting @ Barren River State Resort Park. For more information contact KOS at P.O. Box 463, Burlington, KY 41005 or via their website at http://www.biology.eku.edu/kos/default.htm.

Fall 2011 TBA: Kentucky Society of Natural History 2011 Fall Meeting @ Cumberland Falls State Resort Park. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

2012:

April 2012 TBA: Kentucky Society of Natural History 2010 Spring Meeting @ Great Smoky Mountains National Park. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

Fall 2011 TBA: Kentucky Society of Natural History 2011 Fall Meeting @Green River area of Kentucky. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

KENTUCKY NATURALISTS' CALENDAR OF REGULAR MEETINGS & TEMPORARY EXHIBITS

(added as space and time allow)

Meetings:

Beckham Bird Club (BBC) – 2nd Tuesday of each month (except March & June) at 7:00 p.m. @ the Clifton Center, 2117 Payne Street, off of Frankfort Avenue in Louisville, KY. e-mail: beckhambirdclub@gmail.com

Falls of the Ohio Archaeological Society (FOAS) – 2nd Saturday of every month at 2-4:00 p.m. @ the Falls of the Ohio State Park Interpretive Center in Clarksville, Indiana (right across the Ohio River from Louisville).

Greater Cincinnati Herpetological Society (GCHS) - 1st Wednesday of each month at 7:00 p.m. @ the Cincinnati Nature Center/Rowe Woods, 4949 Tealtown Road • Milford, OH. GCHS, P.O. Box 14783, Cincinnati, OH 45250, phone: (513) 956-7536, email: info@cincyherps.com.

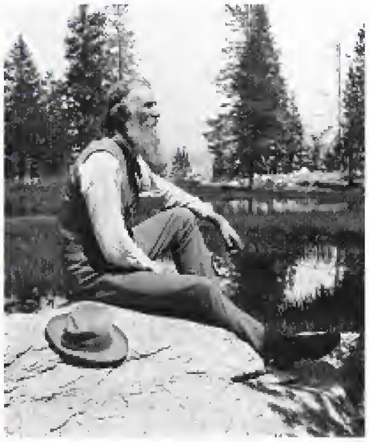
Kentucky Herpetological Society (KHS) - 2nd Sunday of each month at 6:00 p.m. @ Louisville Nature Center, 3745 Illinois Ave. in Louisville, KY

Daviess County Audubon Society (DCAS) – 2nd Monday of each month at 7:00 p.m. @ First Christian Church, 700 JR Miller Blvd, Intersection of JR Miller Blvd and 7th Street, Owensboro, KY

Exhibits:

August 15-November 29, 2009: **"Green Planet: The History of Plants"** @ **Falls of the Ohio State Park**, 201 W. Riverside Drive, Clarksville, Indiana 47129.

> **"September 9 [1867]. Another day in the most favored province of bird and flower. Many rapid streams, flowing in beautiful flower-bordered canons embosomed in dense woods. Am seated on a grand hill-slope that leans back against the sky like a picture. Amid the wide waves of green wood there are spots of autumnal yellow and the atmosphere, too, has the dawnings of autumn in colors and sounds. The soft light of morning falls upon ripening forests of oak and elm, walnut and hickory and all Nature is thoughtful and calm. Kentucky is the greenest, leafiest State I have yet seen. The sea of soft temperate plant-green is deepest here. Comparing volumes of vegetable verdure in different countries to a wedge, the thick end would be in the forests of Kentucky, the other in the lichens and mosses of the North. This verdure wedge would not be perfect in its lines. From Kentucky it would maintain its thickness long and well in passing the level forests of Indiana and Canada. From the maples and pines of Canada it would slope rapidly to the bleak Arctic hills with dwarf birches and alders; thence it would thin out in a long edge among hardy lichens and liverworts and mosses to the dwelling-places of everlasting frost. Far the grandest of all Kentucky plants are her noble oaks. They are the master existences of her exuberant forests. Here is the Eden, the paradise of oaks. Passed the Kentucky line towards evening and obtained food and shelter from a thrifty Tennessee farmer, after he had made use of all the ordinary anti-hospitable arguments of cautious comfortable families." –John Muir, 1867**



John Muir (April 21, 1838 – December 24, 1914) was a Scottish-born American naturalist, author, and early advocate of conservation of U.S. wilderness. Graphic Source: Library of Congress. Quote Source: 1916. Muir, John. A Thousand-Mile Walk to the Gulf. Boston And New York: Houghton Mifflin Company.

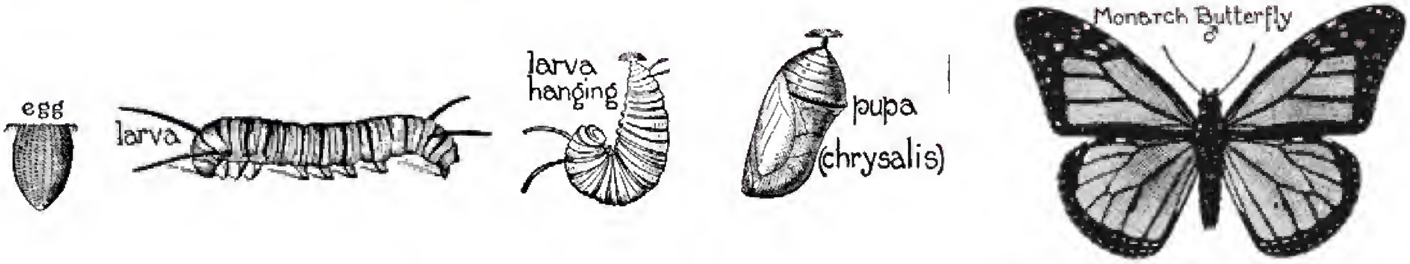
...Newsletter Photo Contest, continued from page 69...

Parthenocissus quinquefolia **(L.) Planch., 1887 (Virginia Creeper) berries - Susan Wilson**

Toxicodendron radicans **(L.) Kuntze, 1891 (eastern poison ivy) and *Limenitis arthemis astyanax* (Fabricius, 1775) (red-spotted purple) - Susan Wilson**

Lobelia siphilitica **L., 1753 (great blue lobelia) and *Ageratina altissima* (L.) R.M.King & H.Rob., 1970 (white snakeroot) - Chris Bidwell**

Cumberland River - Susan Wilson,



Depictions of the life cycle of *Danaus plexippus* (Linnaeus, 1758) (monarch butterfly) in: 1903. Colton, Buel P. Zoology: Descriptive and Practical. Boston: D.C. Heath & Co. p26

The mission of the Kentucky Society of Natural History (KSNH) is to actively promote study and interest in Kentucky's rich natural heritage throughout the Commonwealth. Members are typically interested in a broad spectrum of natural sciences and related fields. Among the more prominent activities of the KSNH, are the annual Spring and Fall Conferences, selection of a "Naturalist of the Year", nature photography contests, research grants, and a variety of knowledgeable speakers and field trips. We invite anyone who shares our interests to join us. For membership information or the address of the nearest affiliated chapter, please contact:

KSNH, P.O. Box 72777, Louisville, KY 40272-0777, or visit our website <http://www.ksnh.org> for the membership form. Membership dues are: Individual $15, Family $25, Full Time Student $7.50, Life: $300.

The Kentucky Society of Natural History is an official 501(c) (3) tax-exempt nonprofit organization which was formed in 1939, and incorporated in 1943 in Louisville, Kentucky. All contributions to THE KENTUCKY SOCIETY OF NATURAL HISTORY are tax-deductible to the full extent of federal and state income tax laws.

Published quarterly, The Kentucky Naturalist News is the official newsletter of KSNH. Unsolicited contributions are encouraged. Please send articles to: **Barry Nichols, KNN Editor, P. O. Box 21182, Louisville, KY 40221**. You can also email newsletter submissions by sending them to kyfauna@iglou.com.

Kentucky Naturalist News Deadlines:

Issue	Deadline	Tentative Publish Date
Winter Issue	November 1, 2009	December 1, 2009
Spring Issue	February 1, 2010	March 1, 2010
Summer Issue	May 1, 2010	June 1, 2010
Fall Issue	August 1, 2010	September 1, 2010

For submissions, please cite references. To assist, you may use: http://www.lib.ncsu.edu/lobo2/citationbuilder/citationbuilder.php.

Kentucky Society of Natural History,
P.O. Box 72777,
Louisville, Kentucky 40272-0777.

Formed 1939,
Incorporated 1943

Kentucky Naturalist News

Official Newsletter of the Kentucky Society of Natural History

Volume 67, Number 4, Winter 2009

Website: http://www.ksnh.org

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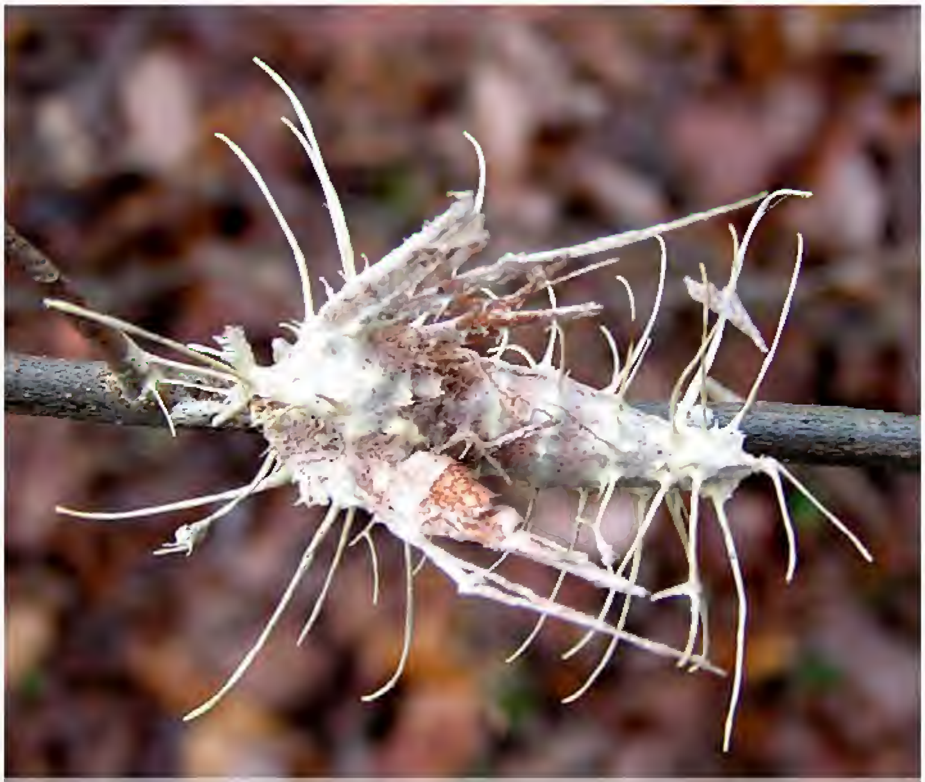
Wilderness Trail Chapter (Pineville) meets the first Thursday of each month, March through December, at 7:00 p.m., generally at Pine Mountain State Resort Park in the Ray Harm Room, 1050 State Park Road Pineville, KY 40977-0610 (800-325-1712). Call President Tom Toole at (606) 248-3078, or via email (tom.tdtoole@gmail.com).



A *Laothoe juglandis* (J.E. Smith, 1797) (walnut sphinx moth) killed by a developing *Akanthomyces* sp. of fungus. - Barry Nichols, 2006.

EDITOR'S NOTES

I'll start with the bad. Many of you know about Operation Migration and their efforts to train captive-bred whooping cranes to migrate south. On November 19, 2009 they found their hanger, where they store the ultralight aircraft they use to fly with the cranes, was vandalized. The damage to the ultralight and extra wings was estimated at $20,000. The operation, like most non-profits, runs pretty lean and they had no insurance. Further, some crew members also had belongings in the facility which were damaged or stolen. There are currently fund-raising efforts underway in addition to generous people who have offered matching funds. To read more about Operation Migration, read the Field Journal at http://www.operationmigration.org/Field_Journal.html, call them at **(905) 982-1096**, or write them at **Operation Migration - USA, 1623 Military Rd., PMB# 639, Niagara Falls, NY 14304-1745**.

Late fall and winter is a great time to be out in the woods. There is plenty to see. Late persimmons and nuts are available. Winter insects emerge. It's a good time to learn and/or test your winter botany skills. Resist the urge to stay inside, and go play. The deadline for submissions for the next issue is February 1, 2010. Until then I wish you all well. **–barry**

GRUS CANADENSIS TABIDA (J.L. PETERS, 1925) (GREATER SANDHILL CRANE)

by Wayne Tamminga

Grus canadensis tabida **(J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009**

Grus canadensis tabida (J.L. Peters, 1925) (greater sandhill crane) is one of six subspecies of **sandhill cranes** and the only one that moves through and **winters in Kentucky**. *Tabida* is from the **Latin tabidus** meaning "shrinking" or "wasting away".

The breeding range of the **greater sandhill crane** spans mid-continental North America from the Great Lakes to the Pacific Ocean. Scientists divide the greater sandhill crane into five distinct regional populations and Kentucky is in the **eastern population**. The breeding grounds of the eastern population are in South-central Canada, the Western Great Lakes, and the Upper Midwest (southern Ontario, Michigan, Wisconsin, northern Illinois and Iowa, and southeastern Minnesota). The population exceeds 30,000 and is rapidly expanding. The main portion of the population migrates through the east-central United States (Illinois, Indiana, Ohio, Tennessee, Kentucky) to wintering grounds as far south as southern Georgia and central Florida.

Grus canadensis tabida **(J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman,**

Fall migration begins around November 1st in Kentucky, and the last ones leave in the spring by March 15th. The two major winter grounds in Kentucky are **Barren River Lake**, and lands around **Cecilia**, five miles west of Elizabethtown. Wintering numbers can be upwards of 4,000 cranes in each of these areas. Cranes are often **heard** and not seen migrating through the state. Their "call of the wild" has been described as a bugling or trumpeting sound, "garoo-a-a-a" and can be heard for several miles, where the birds typically can fly over a mile high. Strong winds, fog or heavy rain halt their migration which is only done during daylight hours. Sandhill cranes fly at 38 mph for up to 9.5 hours straight and go 360 miles, although roughly half this distance is the norm.

Adult body plumage is characterized by varying shades of gray. Adults have a white cheek patch. Legs and toes are black. They have a red forehead-crown and lores are covered with reddish skin, white cheeks and a long dark pointed bill. Immature birds have reddish brown upperparts and gray underparts. The sexes look alike. In general, males and females are virtually indistinguishable, but within a breeding pair, males tend to be larger than females. Juvenile plumage changes from cinnamon brown to gray as the bird matures during the first year, juveniles have a feathered head.

Weight: 8-14 lbs.
Height: 4.5-5 ft.
Wingspan: 6-7 ft.
Lifespan: 12 years on average, up to 25 in the wild, twice this amount in captivity, oldest record 88 years old

The sandhill crane has one of the longest **fossil histories** of any extant bird, up to 10 million years old.

They never become flightless because of differential molting pattern-they never lose all their flight feathers. In flight, cranes move their long, wide wings with a slow downward flap and a rapid upstroke, their legs extending beyond the tail, and neck outstretched. Unlike the similar-looking, but unrelated herons, cranes fly with necks outstretched, not pulled back in an "S". Cranes always stand on the ground or in water never in trees, like herons sometimes do.

Grus canadensis tabida **(J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009**

Dancing

- Can happen at anytime of day in any season
- Consist of bows, jumps, vegetation-tossing, and wing flapping
- Are not limited by age or sex
- For strengthening pair bonds, courtship, thwarting aggression/relieving tension, and normal motor development

Grus canadensis tabida **(J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009**

Mating

- Perennially monogamous mating for life. They have pair bonds that persist even during non-breeding seasons.
- Fights similar to dancing plus kicking, ground-pecking, bowing, and head-tilting movements that expose the brilliant red crown skin.
- Do not breed until 2-7 years old, with 3 years the average.
- Sandhill cranes are precocial; the young can run and swim when one day old.
- Juveniles can become independent at 10 months of age.

Nesting

- Pairs can fight fiercely for ownership of prime territories.
- Nesting territories are reoccupied on a yearly basis by established pairs.
- "Painting behavior" – birds dredge material from the pond bottom with their bills and spread it over their plumage, causing the feathers to become stained from the organic pigments matching their nesting environment. Nest territories are between 20-200 acres.
- Extremely secretive, Fertilization occurs a week prior to egg laying.

- Nest construction, grass/reed/cattail/rush, one week to complete, done by female, not feather lined.
- 2 eggs are laid 2 days apart, 4 inches X 2.25 inches long.
- 30 day incubation, and begins after the first one is laid unlike main other species.
- Parents take turns incubating while the other is foraging, male stands guard at night.
- 24 hours for the baby bird from the start of pipping to free itself from the egg.
- Parents do not assist; nest is completely abandoned after the second chick can walk.
- Chicks are called colts.

Feeding

- Sandhill cranes are opportunistic feeders. Omnivorous: seeds, berries, acorns, aquatic plants tubers/shoots/buds and small vertebrates (e.g. mice, lemmings, herps, chicks of other birds), lichens, and invertebrates such as insects, snails, worms, crayfish, eggs.

To learn about various aspects of the sandhill crane life history/biology and see them on their roosting and feeding areas, come to one of the sandhill weekend events at Barren River State Resort Park on the weekend of January 29-30, 2010 and February 19-20, 2010. Call (270) 646-2151 for more information.

Grus canadensis tabida (J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009

Wayne Tamminga *is a certified wildlife biologist IV with the Kentucky Department of Fish & Wildlife Resources for the past 15 years. He works as a public lands manager for Barren, Nolin, and Rough River Wildlife Management Areas, and Marrowbone State Forest & Wildlife Management Area. He graduated with a BS in Wildlife Biology from EKU, and loves all things wild. You can reach him at his office phone, 270 646-5167, or by email at wayne.tamminga@ky.gov.*

SANDHILL CRANES – AN ANCIENT MIGRATION

by Keith R. Bridgman

I woke up early New Years Day, 2009. Normally I would have slept in, wanted to, but I wanted more to catch *Grus canadensis* (Linnaeus, 1758) (sandhill cranes) as they left their roost on the mud flats of Peter's Creek on Kentucky's Barren River Lake. Four or five previous trips over that way provided a few opportunities to capture images of the sandhills with my high dollar digital camera and new Sigma 50-500mm telephoto lens, but I wanted more…and better photos. It's much harder than it looks I discovered. Sandhills are jumpy even on their best days and don't tolerate the encroachment of humans into their resting and feeding areas. I discovered that the hard way a week before.

Grus canadensis tabida (J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009

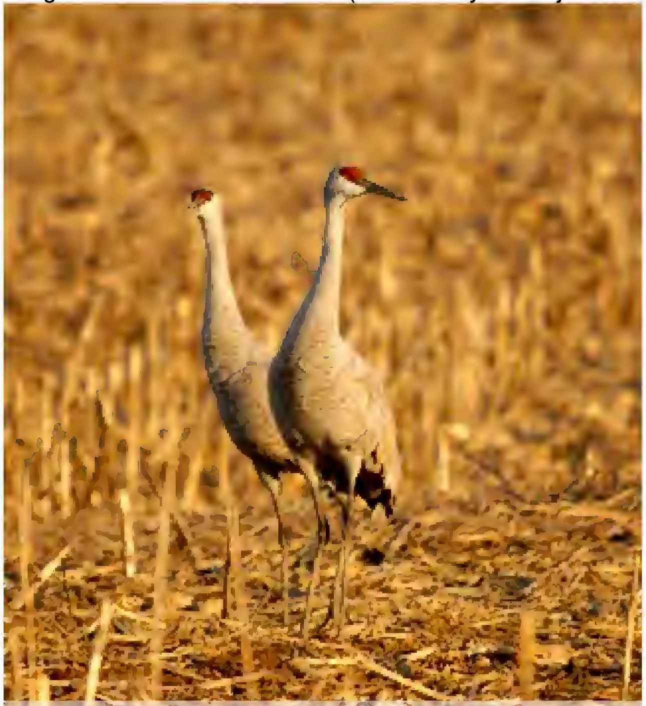
After spotting several thousand of them sitting in a field about a quarter mile from the main road, I walked along a fence row hoping it would hide my movements. Barely fifty steps later still a few hundred yards from my intended observation point, they took to the air. As magnificent of a sight as that was I stood there helplessly, as they honked and chattered in protest to my intrusion, thinking that I had really blown it. But luck was with me and they began to circle around and passed directly over where I was. I put that camera and new lens to good use and actually made some decent shots. But, on this the first day of 2009, my luck would eventually hold better.

Grus canadensis tabida (J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009

Decked out in full hunting gear camouflage I arrived early enough to work my way into a spot next to that same field they were previously using. When I arrived, I discovered they were already there in force, but this time a band of timber blocked their view of my approach. When I got within seventy five yards of where I wanted to setup, I had to slow my pace, crouch as low as I could eventually dropping to a sitting position and scooted along dodging manure piles using one hand to maneuver with and one hand to hold my camera. It took almost twenty minutes to make that last fifty yards, but I managed to close the gap without spooking them and the effort was worth every scrape and splinter as I was able to get some of the best shots to date I've taken of these unique and enchanting birds.

The first time I ever saw **sandhill cranes** was well over a decade ago…closer to twelve years actually… while doing some late season goose hunting on Northwestern Oklahoma's **Canton Lake**. It was there I stumbled into several thousand of them stopping over during their migration south. I didn't have a clue what they were. They were using the mud flats created by the lower than normal lake levels that year. My curiosity was aroused when I couldn't figure out what was creating the chattel-like racket I kept hearing. With a little stealth and helped by an abundance of tall grass that hid my approach, I was able to get within a few yards of the outer perimeter of where they were settling down. From there, peeking through the grass, I watched as they circled high overhead in one giant rotating ball that soared to over 2000 feet filling the air with the chattering and honking of their combined calls. They were circling and swooping all around me as they dropped onto the mudflats. Although they were legal to shoot in Oklahoma (I hear they taste just like chicken), I set my shotgun aside and crouched lower into the edge of the tall grass and simply watched as this best of nature's choreography played out. I was fascinated and forever captivated by their haunting songs. After returning home I followed up the discovery with some research about these **magnificent birds**.

Sandhill cranes are large birds, approximately forty seven inches high and weighing between 8 and 10 pounds with a wing span of almost eighty inches. The males are slightly larger than the females, other than that they look exactly alike. They share a common size and general appearance of their more famous cousins, ***Grus americana*** (Linnaeus, 1758), **whooping cranes**, except the sandhills are a little smaller, are slate grey in color which is often stained brown, and like their cousins have a distinctive red crown across their foreheads. This red crown oddly enough is not feathers but a leathery skin that can grow brighter or darker depending on what mood the birds are in. Mated pairs stay together year round and migrate together with their offspring from their breeding grounds on northern Canada's tundra, and in some cases the northern United States around the Wisconsin area. The **sandhills** that migrate through central Kentucky breed in Wisconsin for the most part and are known as greater sandhill cranes, and exist in lower numbers than their counter parts that migrate through the central part of the country. Those are known as **lesser sandhill cranes** and they migrate in flocks numbering in the hundreds of thousands. Although I've never made the trip over there, there is a stretch on the **Platte River in Nebraska** where **hundreds of thousands of sandhills stop over** every year. That would be something to see.



Grus canadensis tabida (J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009

The birds that migrate through Kentucky are heading for the **Gulf Coast**, but if the weather is mild, they'll spend a good part of the winter on **Barren River Lake** before moving on south. Sandhills are one of the few **cranes** whose numbers are still high and they are locally common but seasonal in this part of the country.

Grus canadensis tabida (J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009

If you have never heard or seen a **large flight of sandhills** then you have missed a real treat. Once you hear their haunting, chattering **calls** interspersed with loud trumpet like honks, you'll never forget it…there is nothing else like it in nature. Often you will hear them long before you see them as they fly high overhead in their distinctive V-formation or long single-file trains. Nothing else sounds like a sandhill crane and to hear an entire flight of them sounding off as they circle overhead is like listening to one of nature's most enchanting symphonies.

A few **sandhills** begin arriving in this area as early as mid-November but usually by the middle of December good numbers have arrived. As many as 4000 of them can layover for extended periods and if the weather stays relatively warm, they may remain in the area through the winter and into the early spring before heading back north.

As someone who enjoys nature photography, the idea of having such opportunity so close to home is just too tempting to ignore. Even so, it takes patience, persistence, and a lot of scouting to take advantage of the opportunity. I've found it best to set up next to a field the birds like to feed in well ahead of when they either leave their roost of a morning or just before they return in the evening. This may take some scouting before being able to determine the best location, but by setting up before they arrive, then chances of capturing some good images improve tremendously.

They tend to move early right at day break from their roosts on the mud flats to their feeding grounds in the cornfields and pastures often not flying too far in the process. A couple hours before sundown they start making their way toward their roosting areas often stopping over in a favorite field before heading off one final time for the day. You should be dressed in drab clothes, camouflage is best, but as long as you blend into the background, that should work very well. Portable blinds work well, but sometimes they can be a nuisance to carry around and set up and they tend to restrict visibility. Personally, I prefer to sit inside a patch of tall grass next to a fence row and blend into the natural cover. With any luck at all the birds will begin arriving on schedule, but beware that they have tremendous eyesight and will often catch sight of your movement…even simple movements like raising your camera…and off they will go…I learned that the hard way missing out on several good opportunities as birds were beginning to drop into the cornfield.

Grus canadensis tabida (J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009

If photography is not your thing and bird watching is, then you can often simply watch them from your vehicle. Even so, you might miss out on one of the most amazing parts of their behavior and that is when they take to the air all at one time. When that happens, you almost have to be as close as you can and outside to experience the full impact of the moment. To have thousands of them leap into the air all at once…well, it's a sight you'll never forget. Later that afternoon of that New Years day I just happened to be in the right place at the right time.

Grus canadensis tabida (J.L. Peters, 1925) (greater sandhill cranes, Keith R. Bridgman, 2009

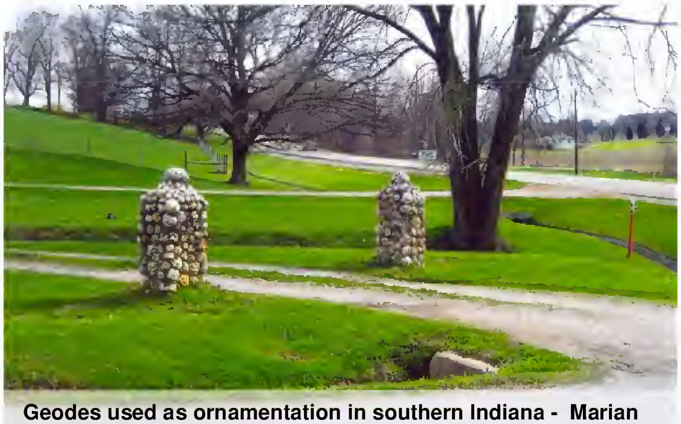
Setup in the tall grass that grew along a fence row on the back side of a cornfield, I snuggled into the cover to get out of the cold wind. Behind me a half mile or so away were the mudflats of Peters Creek where the **sandhills** tended to roost. There were some light clouds drifting low on the horizon mingling with the pale blue sky. About 3:30 pm when the sun began to hover lower in the winter sky, a few flights of the cranes began to drift in and dropped into the field offering me a few opportunities for some good photos. About a mile away most of the birds were feeding or resting on that same rolling pasture I found them on that morning. About 30 minutes before sundown, I noticed what appeared to be a black cloud rise off the fields in the distance. Two to three thousand sandhills took flight all at once and started flying toward me. Wave after wave of them passed overhead chattering to each other and sounding their trumpeting calls that echoed across the country side. A few of the cranes settled into the field in front of me and I snapped their portraits. It was a magnificent sight and even if I had not been able to get some good photos, just being there at that moment made the early rise and long, cold wait worth it all.

The **migration of sandhill cranes** is one of nature's most enduring phenomenon and one that relatively few people have an opportunity to connect with. The **area around Kentucky's Barren River Lake** near the Peter's Creek area offers a great opportunity to witness this timeless and prehistoric movement. By doing so, I've began to view nature with a different attitude and to understand more about how we're all connected. Sandhills are magnificent birds living out their lives amongst one of nature's most enduring spectacles. By taking time to discover them for yourself, in the process you just might jump start your own imagination, and discover something new about yourself and your own world that you never knew existed.

***Keith Bridgman** is a Mainframe Computer Programmer Analyst for the Fruit of the Loom Corporation in Bowling Green, Kentucky. He has combined his love of the outdoors with photography since belonging to an elite Search and Rescue Team while stationed at the U.S.C.G. Umpqua River Motor Lifeboat Station in Winchester Bay Oregon in the mid-1970's. His personal photo website is http://www.beyondthecampfire.com and also has images posted on http://www.sunnysixteen.org/gallery.*

CAULIFLOWER ROCKS ...BUMPY ROCKS ...BRAIN ROCKS ...THUNDEREGGS ...GEODES

by Marian Ziebell

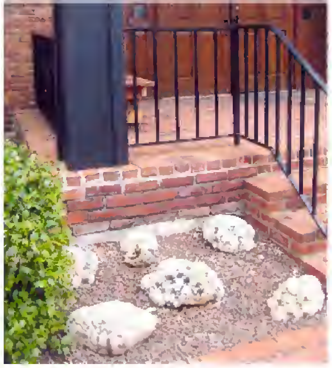

Geodes used as ornamentation in southern Indiana - Marian Ziebell, 2009

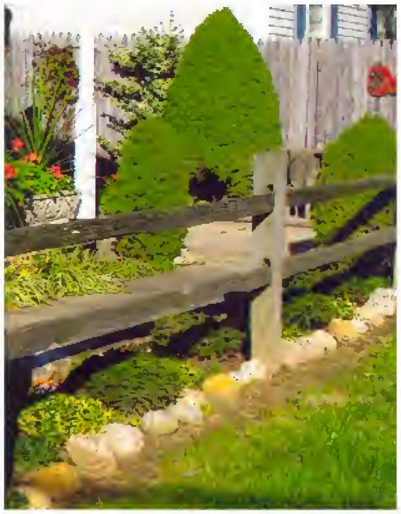
Some marvels of the earth are invisible to our eyes until they are pointed out and explained to us. I didn't "see" the wonder of **geodes** for my first 70 years. Then I moved to **Southern Indiana** and was told about these **curious formations**--spherical, not showy on the outside--coarse and brown or grey and covered with bumps. When cracked open they may be partly hollow and lined with colorful or translucent crystals.

The Museum in Salem, Indiana, has a fine display of **geodes** ornamenting the grounds of their new building. Formerly two geodes larger than basketballs (albeit sagging basketballs) were located near the Museum by historic markers for the birthplace of **John Milton Hay** and the **Monon Railroad**. A friendly Museum guide told us that **geodes** were easily found in past years along rivers, cliffs, and in farmers' fields in the region. In **2005** members of the **KYANA Geological Society** located **geodes containing** calcite, dolomite, quartz, barite and needle-like millerite crystals near Salem.

The word geode (Greek geoides "earthlike" because of the spherical shape) describes a geological rock formation that occurs in sedimentary and certain volcanic rocks. The geode has a hollow center or vug--a small to medium-sized cavity inside rock that may be formed by a variety of processes. The word "vug" was introduced to the English language by Cornish miners. The Cornish word vooga meant "cave." Fine crystals are often found in vugs where the open space allows the free development of external crystal form.

Geodes used as ornamentation in southern Indiana - Marian Ziebell, 2009





Geodes used as ornamentation in southern Indiana - Marian Ziebell, 2009

A geode may contain banded agate, chalcedony, or any of several kinds of crystals including quartz or calcite. They began millions of years ago as gas bubbles in lava that are later filled with minerals carried in by water. After rock surrounding the cavity hardens, dissolved silicates and/or carbonates are deposited on the inside surface. Over time this slow feed of minerals from groundwater or hydrothermal solutions allows crystals to form inside the hollow chamber. The bedrock eventually weathers and decomposes leaving geodes present at the surface.

Geodes are common in certain formations in the U.S., mainly in Indiana, Iowa, Missouri, Kentucky and Utah. An immense geode was discovered in the early 20th century in Put-in-Bay, Ohio. This 35 foot wide hollow geode known as Crystal Cave, located under Heineman's Winery, is open daily for tours. The longest crystal measures 18 inches.

The area in a 35-mile radius of Keokuk, Iowa, is known for superb viewing and collecting of geodes, many of baseball size. Most geodes in Iowa are found near the intersection of the Mississippi and Des Moines Rivers in the southeastern part of the state. A ceremony in Iowa in 1967 named geode the official State Rock. Keokuk and nearby regions have held an annual Geode Fest for the last five years.

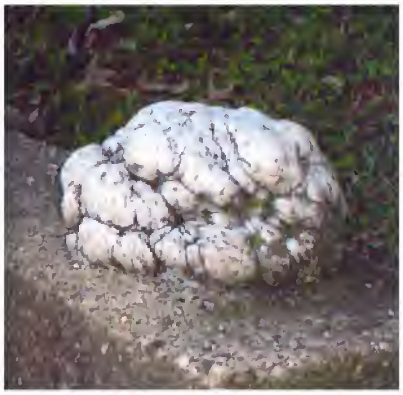
Geodes used as ornamentation in southern Indiana - Marian Ziebell, 2009

The Iowa Department of Natural Resources publication "Iowa Geology," 1987, states: The origins of geodes have vexed geologists for a considerable time, and many hypotheses have been put forward. The most recent geologic research, however, agrees on three general points:

1) Geode precursors were concretions (nodules formed by outward growth around some nucleus) which grew within soft, unlithified sediment.

2) The outer shells of these concretions were replaced subsequently by chalcedony.

3) The interiors of the concretions were dissolved, leaving a hollow space into which quartz crystals could grow. The composition of the original concretions is unclear, though geologists propose they were either limestone or anhydrite, a fairly soluble calcium sulfate mineral related to gypsum.



Geodes used as ornamentation in southern Indiana - Marian Ziebell, 2009

Geodes have been found in the Naica Mine in Mexico, and also in India, New South Wales, Australia, Chile, Peru, and Argentina.

An astonishing discovery of a geode as big as a minivan was made just ten years ago in Almeria, northeastern Spain. The Giant Pulpi Geode was discovered in an iron and silver mine that closed in the 1970's. The elongated egg-shaped geode is 8 meters long (!) and 7 meters high. The quartz crystals are two meters long--so clear that one can read text through them. The site of the **Pulpi geode** is restricted to scientific visitors only because of possible damage from high humidity.

I long to find a nice big geode in a natural setting but so far the joy in my treasure hunt is in viewing geodes in suburban yards. In our walking area in New Albany one neighbor has lined his shrubbery beds with 27 whole geodes, grapefruit size. Another neighbor has fastened 12 large geodes into a cement retaining wall. The entrance posts at either side of a driveway at a home off Indiana highway 131 are completely covered with baseball size geodes.

Geodes used as ornamentation in southern Indiana - Marian Ziebell, 2009

One small delight was finding hundreds of tiny geodes with the Louisville Hiking Club. While we rested in the shade I noticed the sparkling treasures at my feet. Others in my collection are three tennis-ball size geodes from my friend, Al Winslow, who introduced me to the Kentucky Society of Natural History.

Some years ago geodes were found by the river near Bean Blossom, IN. A man who works at a cave in Southern Indiana told me he has lined small gardens with dozens of the interesting bulbous stones. A clerk at a flea market where I bought two cracked geodes said her uncle finds them along the White River in Knoxville, Indiana. I asked if he has one to sell me. She said, "No, he gives them to my grandma and she turns them upside down (hiding the crystals) for a border on her flower garden. She said they call them 'brain rocks'."

Now I have a fine collection, with some beauties purchased at rock shops. I like intact geodes but have several irregularly cracked open to show the lovely light purple amethyst crystals. I bought only one cut and polished geode because I like the contrast of the dull warty outside with the surprising beauty of the inside of most geodes. If crystals are an unnatural purple, green or red they are probably artificially colored.

The mystery and intrigue of geodes has given them a folkloric history. Because they are often found in stream beds they connect to Scandinavian myths that storks drop these round balls containing babies into rivers where they are discovered by happy new parents. Babies are born in water, as we know! Storks are connected to childbirth perhaps because these large water birds with long bills were known to travel thousands of miles in migratory flight to mysterious regions. Storks famously bring good luck by choosing to nest on wagon wheels placed on frameworks on top of warm chimneys in Rust, Austria (pronounced "roost" but not related to that word!) on the Neusiedler See. This large inland lake has a mile-thick reed border. The home with a regularly burning fireplace is likely to contain a strong and healthy couple so the comfy stork drops a baby down thru the chimney.

Large geodes from the museum in Salem, Indiana - Marian Ziebell, 2009

The New Age idea that crystals can harness and direct energy seems to be based upon a misunderstanding of one of the more curious characteristics of certain crystals, namely, that they produce an electrical charge when compressed. This is known as the piezoelectric effect and was discovered in 1880 by Pierre and Jacques Curie. The piezoelectric effect, however, does not give crystals healing or protective power despite the claims of those who use and sell crystals in New Age and neo-pagan occultist shops. However, wearing crystals seems to give some people a feeling of protection. This and their aesthetic qualities seem to be the only virtues of crystal jewelry.

A thunderegg may be referred to as a geode if it has a hollow in it but not all geodes are thundereggs. They usually contain solid centers of chalcedony in the form of agate, jasper, or opal. Thundereggs usually look like ordinary rocks on the outside, but slicing them in half and polishing them may reveal intricate patterns and colors. According to Pacific Northwest Indian legend, the Thunder Spirits lived at the highest reaches of Mount Hood and Mount Jefferson and when they became angry at each other, they threw these spherical stones at each other.

Oregon is one of the most famous thunderegg locations. On March 30, 1965, the thunderegg was designated as the Oregon state rock by a joint resolution of the Oregon Legislative Assembly. The world's largest thunderegg, a 1.75 ton specimen, is housed by the Rice Northwest Museum of Rocks and Minerals in Oregon. Nyssa, Oregon, is the

Geodes used as ornamentation in southern Indiana - Marian Ziebell, 2009

thunderegg capitol of the world and holds a **Thunderegg Days** festival every summer to celebrate.

Geodes shown next to a robin's nest for size comparison - Marian Ziebell, 2009

Germany is also an important centre for thunderegg agates as well as some places in Africa, Poland, Romania, Turkey, Mexico, Argentina, Canada, Australia and France.

Each geode is unique, puzzling, and mysterious, with unassuming exterior except for the awkward nodules. Geodes can symbolize secret treasure and inner beauty. What is inside? The rough outer skin gives no indication of the secrets held within its core. As with some folks--one wants to hammer them open and let everyone see the hidden beauty and order.

When I told a friend I was writing about geodes she said, "Isn't that the kind of rock that you point to and say, 'I know you're in there!'?"

Marian Ziebell *was until recently a resident of New Albany, Indiana. She now lives in Tennessee*

MARK YOUR CALENDARS FOR THE 2010 RUSTY BLACKBIRD HOTSPOT BLITZ!

By Kate Heyden

Euphagus carolinus **(Statius Muller, 1776) (rusty blackbird), male - Kate Hayden, 2008.**

Last year, birders scoured the countryside for wintering Euphagus carolinus (Müller, 1776) (rusty blackbirds) to increase understanding of their distribution and find important local concentrations (hotspots). Much was learned from last year's Rusty blackbird Hotspot Blitz. Kentucky ranked in the top ten states for rusty blackbird sightings, with 11 sightings during the Blitz period (mean count=40.3, median count=8.0). Most of the rusty blackbirds counted during the Blitz were in smaller groups. However, a few large groups were reported in Union County (200 at Sloughs WMA by Charles Crawford) and Henderson County (200 at Sloughs WMA by Charles Crawford and 125 at Green River State Forest by Kate Heyden and Brainard Palmer-Ball)

Although last year's Blitz was successful in better documenting the winter distribution of rusty blackbirds, there is much more to learn. The Rusty Blackbird Hotspot Blitz will be repeated for several years to locate more hotspots and determine how stable known hotspots are from year to year.

The rusty blackbird has been steeply declining with estimates of an 85-99% population drop over the past 40 years. The cause for this alarming decline is not known and the increasingly sparse and patchy winter distribution of the rusty blackbird makes it challenging to learn more about distribution, abundance, and ecology as a basis for conservation efforts. Collaborating with the Cornell Laboratory of Ornithology's and National Audubon Society's e-Bird project, the International Rusty Blackbird Technical Working Group needs your help to find local, but predictable wintering concentrations of Rusty Blackbirds by participating in the 2010 Rusty Blackbird Hotspot Blitz.

The Rusty Blackbird Hotspot Blitz will occur, January 30th – February 15th, 2010, throughout the **rusty blackbird winter range** in over 20 midwestern and southeastern states. Participants will simply be asked to visit locations where they have previously sighted or would expect to encounter **rusty blackbirds** and submit their observations via e-Bird. You can go wherever you like, whenever you like, and as often as you like anytime between the dates of **January 30 and February 15, 2010**. Locations where there are concentrations of rusty blackbirds are of particular interest. If you are unfamiliar with areas which may support **rusty blackbirds** in your region, contact Kentucky's Blitz Coordinator, Kate Heyden for ideas. As a result of these efforts, the Rusty Blackbird Technical Working Group is hoping to create maps of wintering **rusty blackbird** "hotspots" that will help direct research, monitoring and conservation attention.

If you don't use **eBird** regularly, please consider entering all your observations of **rusty blackbirds** (even outside the Blitz period). Your observations of will be used by researchers currently studying their steep long-term population decline.

Additional instructions and information on identification, habitat preferences, etc., will soon be posted on the **Smithsonian Migratory Bird Center's Rusty Blackbird website**:

http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Research/Rusty_Blackbird/

Information and instructions will also be available on **Cornell Laboratory of Ornithology's e-Bird** site:

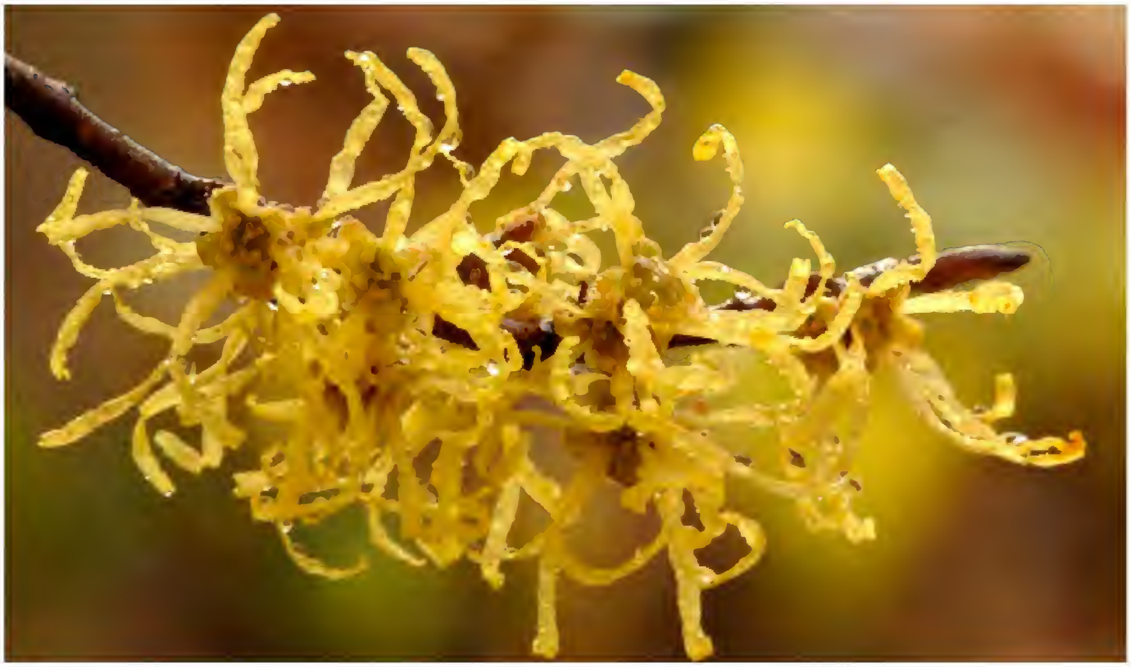
http://ebird.org/content/ebird/news/bird-watchers-urgently-needed-to-track-rusty

The Kentucky Department of Fish and Wildlife Resources encourages participation in this event. The rusty blackbird is a **Species of Greatest Conservation Need** as listed in our **State Wildlife Action Plan** and the information gained from this effort will be used to focus to local **conservation efforts**. Please contact **Kate Heyden**, the Blitz coordinator for Kentucky at kathryn.heyden@ky.gov if you are interested in participating.

***Kate Heyden** is an avian biologist for the **Kentucky Department of Fish & Wildlife Resources**. She specializes in raptors and songbirds. She previously worked on **red-cockaded woodpeckers in Louisiana** before moving to KY to work with the state about two years ago.*

HAMAMELIS VIRGINIANA L. (WITCH HAZEL)

by Chris Bidwell



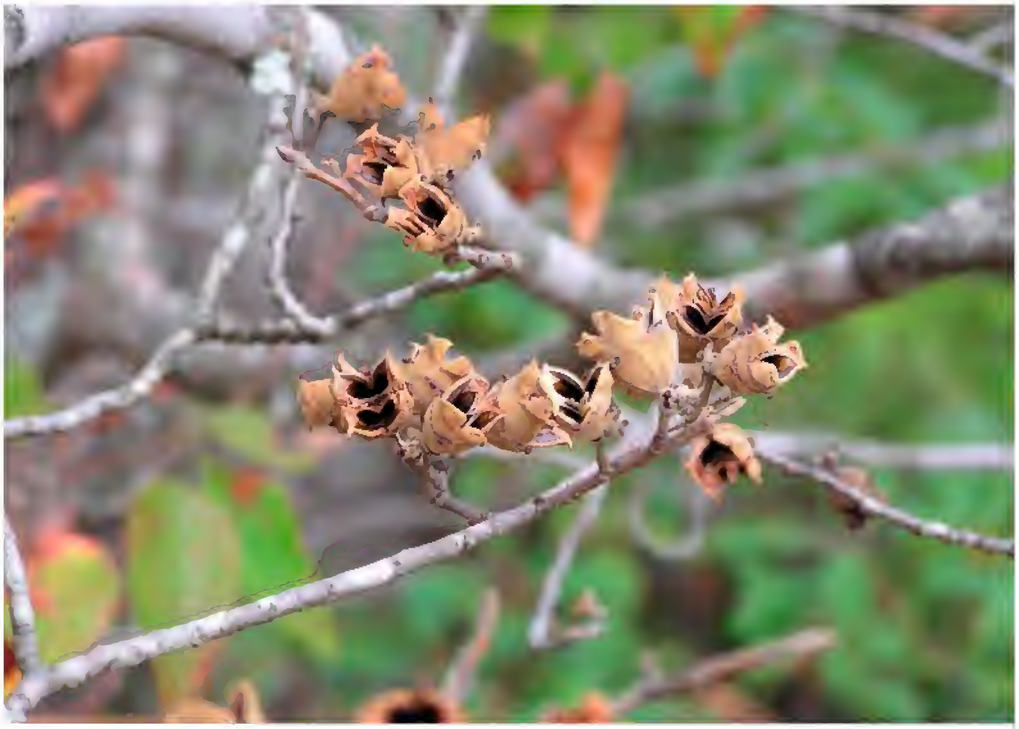
Hamamelis virginiana **L., 1753 (American witch hazel) in flower - Chris Bidwell, 2007**

The shrub ***Hamamelis virginiana*** L., 1753 (American witch hazel) is in the Hamamelidaceae family (witch hazel family) in which only one other species is native to Kentucky – the sweet gum tree (*Liquidambar styracflua*). **American witch hazel** is in bloom from October through November which makes it one of our last blooming plants of the year. It is found as an understory shrub in woodlands, borders, moist settings, ravine slopes, along streams, and ridge tops and is listed as frequent in occurrence. **Witch hazel** is usually found in small colonies as it spreads by lateral rootstocks once the plant reaches ten feet in height. Rarely does witch hazel grow above 20 feet tall and it usually has a maximum diameter of 5-7 inches. Its leaves resemble those of ***Alnus serrulata*** (Aiton) Willdenow, 1805 (**hazel alder**) and ***Corylus americana*** Walter, 1788 (**American hazelnut**): 2-4 inches long, crenate, and with an oblique (offset) base. Its bark is gray and smooth. Stems have a zig-zag appearance and frequently forks.

The beautiful, unusually late blooming axillary flowers have 4 narrow, spidery, brilliant yellow, twisted petals, about 1-2 inches long. These flowers appear after witch hazel has dropped most if not all of its leaves. The fruit which develops over the next 8 months to a year is a hard, dry, 2-chambered capsule with 2 hard black seeds. In the fall these capsules "explode" often with a distinct popping sound and forcefully disperse their seeds up to 20 feet away. Due to the late flowering period, the main pollinators of **witch hazel** are ants.

Witch hazel was given its genus species name (***Hamamelis virginiana***) by Linnaeus. *Hamamelis* is from Latin meaning "together with fruit" and refers to the fact that the plant bears fruits, flowers, and next year's leaf buds at the same time. *Hamamelis* also has Greek origin meaning resembling an apple tree. The witch in witch hazel comes not from magic or witchcraft but it comes from an Old English word, *wice*, which means bendable or pliant and refers to the flexibility of witch hazel's twigs. The hazel is derived from the **use of twigs as divining or dowsing rods** which arose from the English using ***Corylus avellana*** Linnaeus, 1753 (**European hazel**) twigs for similar purposes. These hazel twigs were used to locate or "witch" water. **Witch hazel** is sometimes referred to as "water witch" for its dowsing usage. As it blooms in early winter, witch hazel is also called winterbloom. It is also known as Halloween shrub, as it likely flowers near this date.

Witch hazel is used by several aphids in their developmental stages. One aphid, ***Hamamelistes spinosus*** Shimer, 1867 (the **spiny witch hazel gall aphid**), lays its eggs on the flower bud and a ¾ inch gall forms on the bud and into the twig. This pointed, conical gall resembles a dark miniature pineapple and protects the larva inside. Another aphid ***Hormaphis hamamelidis*** Fitch, 1851, the **witch hazel cone gall aphid**, attacks the plant's leaves. Its eggs, deposited under the leaf, create a red conical gall on the upper leaf surface. The witch hazel shrub can be covered with hundreds of these aphid galls. Neither of these aphids' galls damages the shrub and both types of aphids that develop in these galls bore their way out and fly to birch trees to go through several generations before returning to witch hazel shrubs to lay their eggs and start the cycle over again.



***Hamamelis virginiana* L., 1753 (American witch hazel) seed pods - Barry Nichols, 2008**

In summer you will find some witch hazel leaves rolled up into a tight cylinder from the leaf tip to about half way toward the petiole. This is the home of the tortricid moth ***Cacoecia rosaceana*** Harris, 1841, or **oblique-banded leafroller** or **rosaceous leafroller**. Another moth, the **witch hazel leaf folder**, ***Episimus argutanus*** (Clemens, 1860), has its larva make a leaf fold along an outer leaf edge and "sews" the leaf over its body to the other side of the leaf.

For centuries, Native Americans have used **witch hazel** leaf tea to treat colds, congestion, asthma, and upper respiratory ailments. Twig tea was used to treat muscle ailments and lameness through poultices. Bark tea taken internally was used to treat lung illnesses. But this practice of using witch hazel internally is not recommended as it can be toxic to kidneys and the liver. Bark tea used externally does prove effective in treating/soothing muscle ailments, eczema, acne, poison ivy, and chapped skin. Today witch hazel, in various distilled extracts, is used to treat minor muscle aches, eye illnesses, hemorrhoids, skin toning, and to suppress excessive menstrual flow. Witch hazel contains **procyanadins**, resin, and **flavonoids** which act as astringents and soothing anti-inflammatory agents. The tannins and **gallic acids** in witch hazel leaves and bark give the plant its antiphlogistic (swelling-reducing properties), its anti-hemolytic ability (stops bleeding), and its astringent properties.

Witch hazel is one of the few **herbal or natural remedies** that has passed federal guidelines and obtained approval of the US Food and Drug Administration to be sold specifically for **medicinal usages**. Witch hazel was first prepared as an astringent and sold commercially in the early 1800's by the Reverend Thomas Newton Dickinson. **The Dickinson Company** still produces witch hazel products to this day.

Ruffed grouse, squirrels, probably mice, chipmunks, and other rodents eat witch hazel seeds. Deer browse on the twigs and foliage. Nurseries sell native witch hazel and numerous cultivars as understory/border ornamentals.

On your winter hikes, look for witch hazel flowers and listen for the seed capsules popping open to disperse their beautiful black seeds. Take time to notice the open seed pods and zig-zag stems. Have a great winter.

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***Chris Bidwell** is an amateur naturalist and the current President of the Falls of the Ohio Chapter of KSNH.*

A MESSAGE FROM THE PRESIDENT – WINTER 2009

by Joe Settles

Merry Christmas and Happy New Year Everyone!

I just want to take this opportunity to thank the Society for the opportunity to serve as your President for the past two years and your Vice-President for the previous fours years. It has been a very enjoyable experience to serve in an official capacity for the group, and I look forward to serving as a coordinator in the future. I especially want to thank the officers that have served with me over the past few years. Cindy Payne worked very hard setting up the events, getting contracts, and managing the funds we use to provide quality outings. Margarette Perkins has done a great job documenting our activities. I also want to thank Zeb for his help and willingness to take on the role of President in the near future. Barry Nichols has done an amazing job showcasing the Society through the newsletter, and Dave Luzader is always working to improve our fantastic website. Dave recently created an online membership form that you can easily pass along to all of your friends. We also have a great group of coordinators that work very hard to make our meetings a success and our newsletter valuable. Please take the time to send all of these great people a note of thanks, and please consider participating as a coordinator or officer in the future.

The KSNH has been a great opportunity to share my passion for Kentucky with my family. The Fall and Spring meetings have been very influential on my kids, especially my oldest J.T. After our trip to Reelfoot in early October, J.T. actually decided to dress up as a naturalist/eagle holder for Halloween! He proudly wore his KSNH hat, name badge, snake stick, binoculars, and big gloves (to hold his eagle) all around the neighborhood and to his school functions. It was fun to watch him focus his entertainment on nature in the middle of Batman, Spiderman, and Transformers. I am quite certain he understands that

Reelfoot Lake, Land Between the Lakes, Bad Branch, Black Mountain, Natural Bridge and the other natural areas we have visited are special, and the KSNH can take pride in impressing those values on our Junior Naturalists.

I am also very pleased at the impact we are having on our scholarship students that we have supported over the past several years. The money we have dedicated to these students has been well worth it as evidenced in the many presentations we have seen at our past meetings. Your support of these students has helped them purchase supplies, fuel, and probably a Big Mac or two while they work hard to collect their data for analysis. The opportunity to take that data, organize it into a working document, and present their results will serve them well throughout their careers.

There is a great slate of officers taking the helm, and they will do a wonderful job keeping the Society an important, meaningful organization. Please help them any way you can. Thanks again for the opportunity to serve, and I look forward to seeing you at future events.

***Joe Settles** is the Kentucky Society of Natural History's President for the 2008-2010 term.*

FIFTY YEARS OF SMOKIES MEMORIES

by W. H. (Wally) Roberts

It was 1960 when my father announced the family would be going to Gatlinburg, Tennessee for the family's very first vacation and fishing trip. As a 12 year old, I thought he meant Gettysburg, Pennsylvania, the Civil War battle field as I had never heard of **Gatlinburg**, much less the Great Smoky Mountain National Park.

We left Louisville, Kentucky in our 1954 Chevy and headed out in heavy traffic and endured crooked two-lane roads. After what seemed like an eternity, we arrived in Gatlinburg and checked into a hotel. In 1960, Gatlinburg was a small burg with family-owned hotels, restaurants, and craft shops.

Before arriving in Gatlinburg, we passed through a town with the strange name of Pigeon Forge which appeared to consist of three areas:

1. A concrete statuary shop with a caged black bear and a sign that read "Bear will drink Choc-ola for $1 dollar". I would later discover the statuary was the place in town to buy bootlegged fireworks.

2. Hillbilly Village, which had a carnival atmosphere and appealed to my 12 year old mentality.

3. The only other business in Pigeon Forge was the Green Valley Motel and Restaurant. A nicely maintained and landscaped facility sitting on the banks of the Little Pigeon River.

While my mother and sister shopped, my Dad and I went fishing for "mountain trout". After several days of unsuccessful fishing, my Dad said, "I now know the best way to catch trout" and off we went to the Smoky Mountain Trout House Restaurant where we caught trout with a knife and fork. During that initial trip, I fell in love with the mountains and have returned to the Great Smoky Mountain National Park several times every year since.

It wasn't until 1970, after graduating from college, that I began to seriously hike and explore the Park. I quickly learned that the natural beauty and solitude I found in the Great Smoky Mountain National Park far surpassed the commercialism, noise, and crowds of Gatlinburg. In the name of economic development, Pigeon Forge has evolved into an area that I can only describe as obscene. From that time on, I only venture into both towns as a last resort in order to reach other areas of the Park.

Fifty years have brought a lot of changes to the the Great Smoky Mountain National Park. Many of the changes are good, such as the designation of the Great Smoky Mountain National Park as a World Heritage Forest by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the long term All Taxa Biodiversity Inventory. However, four major events affecting trees during the last fifty years have drastically changed the biodiversity of the Smokies as well as its view- sheds:

1. Some 95 percent of the large *Abies fraseri* (Pursh) Poiret 1817, Fraser firs in the Great Smoky Mountain National Park have been killed by a tiny European import called *Adelges piceae* (Ratzeburg, 1844), the balsam woolly adelgid. The Fraser fir is one of the key components of the unique red spruce-Frazer fir forest which cloaked the Smokies' highest peaks in a dark green veil for centuries. Today, the highest peaks are mainly covered with ***Picea rubens*** Sargent 1898, or **red spruce**, and ghosts of the **Frazer fir**.

2. Much of the seasonal beauty of the Great Smoky Mountain National Park, in the 1970's and before, were the white spring-flowering ***Cornus florida*** L. 1753, (**flowering dogwood**) trees. They seemed ubiquitous during April with every stream bank and moist cove covered with their bright beauty. A non-native fungus, ***Discula destructiva*** Redlin (1991) (**dogwood anthracnose**), has killed thousands of these **flowering dogwoods** and has left a spring void in the Smokies.

3. We all remember the large stands of pines on the south-facing slopes of the Smoky Mountains. Today these large stands have been turned into dead-falls, widow-makers, and bramble infested areas. The culprit is ***Dendroctonus frontalis*** Zimmermann 1868, the **southern pine bark beetle**, a native species whose predation in naturally triggered by unusually warm winters about every sixty years or so.

4. Lastly, and perhaps the most costly ecologically to the Great Smoky Mountain National Park, is the **hemlock woolly adelgid**. Similar to the **balsam woolly adelgid** which has devastated the Great Smoky Mountain National Park's **Fraser firs**, this tiny Asian insect may do irreparable harm, not only to ***Tsuga canadensis*** (L.) Carrière 1855 (**Eastern hemlock**), but also to micro habitats such as hemlock coves and stream banks (with their unique flora and fauna). The most serious condition caused by the **hemlock wooly adelgid** is loss of dense **hemlock** shade near streams that will cause water temperatures to rise resulting in unsuitable stream habitat for a myriad of unique organisms, many indigenous to the Great Smoky Mountain National Park.

While the effects of these non-native, as well as cyclic native, blights may seem overwhelming today, many more exotics are on their way or have recently arrived.

We know not what the future holds for the **Great Smoky Mountain National Park**; but we do know that **Mother Nature** can be counted on to help keep the balance in our natural world.

Hiking in the Smoky Mountains during the last 50 years has been indescribable…I cannot imagine what hiking there must have been like 100 years ago with the mighty **American chestnut** forests covering the area. I only wish I could be around 50 years in the future to witness the changes that will take place.

All Americans should be thankful for our **National Park System** which will always provide generations of Americans with the opportunity of viewing America's most beautiful natural treasures past, present, and future.

This year, 2009, marks the **75th anniversary of the Great Smoky Mountain National Park**.

Wally Roberts *was Kentucky Naturalist of the Year 2002. He is a long-time biology instructor, interpretive naturalist, and nature photographer. He graduated with a BS in Biology from Morehead State University, and M.Ed. in Biological Education from the University of Louisville. He's been president of KSNH (3 times), former president of the Falls of the Ohio Chapter, and past president of the Board of the Louisville Nature Center. He's currently the Grant Coordinator for KSNH.*

CHAPTER NEWS

Falls of the Ohio Chapter by Chris Bidwell - Falls of the Ohio Chapter president

Falls of the Ohio chapter

A planning session for our local chapter for the 2010 year was held on Nov. 3. If you did not attend and have ideas for speakers, topics, or field trip suggestions, please get them to me ASAP. It is not too late. You can call me at 502-896-4834 or e-mail me at mabteacher1@yahoo.com. Any idea will be gratefully appreciated and considered. This is **our** chapter – everyone needs to give input as to what they would like so that it can be presented at out meetings. Plan on getting out this winter and enjoying the natural world.

Falls of the Ohio Chapter Events (see front cover for regular meeting times and place, field trip times may be found below or are to be determined. Contact Chris Bidwell for more information.

2009 Dates	Event/Speaker	Topic / Outing	Photo Contest Topic
November 19	Meeting: TBD	TBD	A Fall Leaf (single leaf)
November 21	Field Trip: TBD	Muscatatuck National Wildlife Refuge	

December 14	Annual Dinner: Episcopal Home, 7608 Dudley Square, 6:00 PM	Al Boice will present a tribute to the Lifetime of Photography of Terri Boice.	
2010 Dates	**Event/Speaker**	**Topic / Outing**	**Photo Contest Topic**
January			
February 18	Emily Goldstein	Polar Bears in Peril due to climatic Changes	
September 16	Tommy Parker	Squirrel Behavior	
November 18	Laura Patton	Otter Restoration in Kentucky	
December	Annual Dinner:	TBD	

WINTER 2009 NEWSLETTER PHOTO CONTEST:
THE TOPIC IS "WINTER BIRD RESIDENTS OF KENTUCKY"

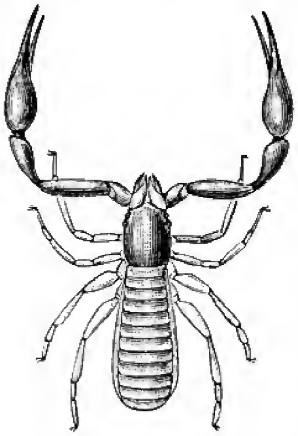
Female *Anas platyrhynchos* Linnaeus, 1758 (mallard) – David Becker, 2006

***Baeolophus bicolor* Linnaeus, 1766 – David Becker, 2006**

Male *Picoides pubescens* (Linnaeus, 1766) (downy woodpecker) – David Becker, 2009

Figure of a pseudoscorpion from:

William Dwight Whitney. 1889. The Century Dictionary and Cyclopedia: An Encyclopedic Lexicon of the English Language. New York: The Century Co.



KENTUCKY NATURALISTS' CALENDAR

(added as space and time allow)

2009:

November 13-14, 2009: The 35th Annual Meeting of the Society of Kentucky Lepidopterists (SKL) @ Entomology Department, University of Kentucky, Lexington, Kentucky. For details see the SKL website at http://bioweb.wku.edu/faculty/Marcus/KYLeps.html.

Saturday, December 5, 2009: Live Snake Program @ 3745 Illinois Avenue, Louisville, Kentucky 40213 (11:00 a.m.-12:00 noon). Learn what makes a snake a snake! A live animal presentation will accompany a picture presentation. Participants will learn what defines a snake and how these adaptations benefit the animal instead of working against it. Members of the **Kentucky Herpetological Society**, Ian Curtis and Brett Whitaker, will be on hand to answer questions after the presentation. Reservations appreciated. Contact them via email at lnc@bellsouth.net, via phone at (502) 458-1328 , or on their website at http://www.louisvillenaturecenter.org.

Saturday, December 5, 2009: Winter Tree Identification @ Floracliff Nature Sanctuary, Lexington, KY (1:00 p.m.). Warm up on this hike to Elk Lick Creek. Preserve Manager Beverly James will discuss how to identify trees by looking at their bark, buds, and leaf scars. Contact them at (859) 351-7770, via email at floracliff@aol.com, or on their website at http://www.floracliff.org.

Saturday, December 19, 2009: Winter Wonderland Hike @ 3745 Illinois Avenue, Louisville, Kentucky 40213 (1:00 p.m.-3:00 p.m.). Appearances can be deceiving! This is not a dead season--just one that requires looking more closely for signs of life. Join naturalist Kerry Jones for a hike and exploration of the Nature Preserve just two days before the official beginning of the winter season. Contact them via email at lnc@bellsouth.net, via phone at (502) 458-1328 , or on their website at http://www.louisvillenaturecenter.org.

Monday, December 28, 2009: Discovering Geodes @ Falls of the Ohio State Park Interpretive Center, 201 W. Riverside Drive, Clarksville, Indiana 47129 (2:00-3:00 p.m.). Fascinated with the crystal-filled round rocks found in Indiana and Kentucky? How were they formed? Why are some hollow and others solid? What minerals are found inside? Why are they found in certain locations and not everywhere? Explore the geology of the curious geode and find answers. Contact the park at (812) 280-9970, or via email at park@fallsoftheohio.org, or visit their website at http://www.fallsoftheohio.org.

Tuesday, December 29, 2009: Polar Bears In Peril @ Falls of the Ohio State Park Interpretive Center, 201 W. Riverside Drive, Clarksville, Indiana 47129 (2:00-3:00 p.m.). Emily Goldstein is Arctic Teen Ambassador for the Louisville Zoo and a freshman at the University of Louisville. She will share her experiences with polar bear research and show how climate change is affecting their ecosystem. Emily has been to Churchill, Manitoba twice to study the bears, and has first-hand knowledge of how climate change has already affected the Arctic. Contact the park at (812) 280-9970, or via email at mailto:park@fallsoftheohio.org?subject=KSNH inquiry, or visit their website at http://www.fallsoftheohio.org.

2010:

January 19, 2010: Nature Rocks! Family Nature Club: Get Pepped Up and Pumped About the Outdoors! @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). Did you know that getting outside can be both FUN and healthy? Learn more as we kick off our Family Nature Club Series with activities and info from the We Can! Program. Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

January 29-30, 2010: Sandhill Crane Weekend Event @ the Stonehaven Room at Barren River Lake State Resort Park lodge, 1149 State Park Road; Lucas KY 42156. Call (270) 646-2151.

February 12-15, 2009: Great Backyard Bird Count. For details, see the GBBC website at http://www.birdsource.org/gbbc/, or contact the Cornell Lab of Ornithology at http://www.birds.cornell.edu/ or by phone at (800) 843-BIRD, (800) 843-2473.

February 16, 2010: Nature Rocks! Family Nature Club: FALL in LOVE with Nature! @ Meet at the Russell County Public Library, 94 North North Main Street, Jamestown, KY 42629 (phone:270-343-3545) (5:00-6:30 p.m.). Do animals have emotions? If you've asked this very question, come out for a special story adventure. Lots of yummy goodies will also be available as we learn more about the many ways animals show their feelings. Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

February 19-20, 2010: Sandhill Crane Weekend Event @ the Stonehaven Room at Barren River Lake State Resort Park lodge, 1149 State Park Road; Lucas KY 42156. Call (270) 646-2151.

March 16, 2010: Nature Rocks! Family Nature Club: Camping 101 @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). Ever wanted to know how to put up a tent, start a fire or just get over your fear of camping in the great outdoors? If so, check our this afternoon of camping basics for you and your family. Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

April 16-18, 2010: Wildflower Weekend @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810 (6:00 p.m. Friday to lunch Sunday). During late April, the Settlement School property is a wildflower wonderland, with nearly 100 species of spring wildflowers. Details of guest speakers and special programming will be announced at a later date. Various rates apply. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

April 20, 2010: Nature Rocks! Family Nature Club: TLC for Our T&E's @ Meet at the Russell County Public Library, 94 North North Main Street, Jamestown, KY 42629 (phone:270-343-3545) (5:00-6:30 p.m.). Whether great or small, all plants and animals have a special place in our world. Learn more about the many threatened and endangered species and what you can do to make a difference. Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

April 23-25, 2010: Kentucky Ornithological Society's Fall Meeting. Jenny Wiley State Resort Park. For more information contact the Kentucky Ornithological Society at P.O. Box 463, Burlington, KY 41005, or via their website at http://www.biology.eku.edu/kos/default.htm.

April 22-25, 2010: Kentucky Society of Natural History 2010 Spring Meeting @ Shawnee State Park, Ohio. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

April 30-May 2, 2010: Black Mountain Weekend @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810 (6:00 p.m. Friday to lunch Sunday). Wildflower lovers will enjoy visiting Black Mountain, the highest point in Kentucky and habitat to rare species of wildflowers and birds. Wildflower species exclusive to Black Mountain are: Painted Trillium, Roseate Twisted Stalk and Red-Berried Elder. Bird species include Canada Warbler, Black-throated Blue Warbler, Veery Thrush, and Rose-breasted Grosbeak. Saturday's activities will also include hikes at Kingdom Come State Park and Bad Branch State Nature Preserve. Details of guest speakers and special programming will be announced at a later date. Various rates apply. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

May 18, 2010: Nature Rocks! Family Nature Club: Awesome Amphibians! @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). With summer right around the corner, come out and learn more spring peepers, trilling toads and more by exploring the hatchery grounds, including our wetlands, to learn more about the beautiful sounds of the late spring evening! Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

June 9-13, 2009: In the Footsteps of Lucy Braun @ Pine Mountain Settlement School, 36 Highway 510, Pine Mountain, KY 40810. This four-day forest study workshop is named in honor of one of the first and foremost conservationists of the 20th century, E. Lucy Braun. Dr. Lucy, as she was called by her colleagues, devoted her life to the study of plants and to conservation campaigns to save wilderness areas and other natural sites. The four-day workshop will combine field trips, lectures, and slide presentations in the study of forest types found in Eastern Kentucky. Daily field trips will include four- to eight-mile hikes. The workshop is geared toward adults. Fee based. Contact the Pine Mountain Settlement School at 606-558-3571 or 606-558-3542 for details. You can also visit their website at http://www.pinemountainsettlementschool.com/.

June 15, 2010: Nature Rocks! Family Nature club: National Pollinator Week @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). Gardening, flowers, foods and more… what do they have in common? All rely on the power of pollinators! Come celebrate Pollinator Week and learn more about about these winged creatures and how to save them! Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

July 20, 2010: Nature Rocks! Family Nature Club: Stream Hike and Exploration @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). Come prepared to flip over rocks and learn what makes a stream healthy! Wear old clothes you don't mind getting dirty and old, comfy sneakers with good tread! PLEASE: NO sandals or flip flops! Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

August 17, 2010: Nature Rocks! Family Nature Club: Water, Water Everywhere! @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). Although it might be the dog days of summer, here's a great event to learn more about a resource that is needed by us all: water! Activities, games and more await you and yours! Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

Fall 2010: Kentucky Ornithological Society's Fall Meeting @ Paducah/Ballard Wildlife Management Area (dates to be announced). For more information contact KOS at P.O. Box 463, Burlington, KY 41005 or via their website at http://www.biology.eku.edu/kos/default.htm.

September 10-12, 2010: Kentucky Society of Natural History 2010 Fall Meeting @ Shakertown National Historic Landmark. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

September 21, 2010: Nature Rocks! Family Nature Club: Trout-tastic Fishing @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). Bring your family to enjoy an afternoon of fishing fun. All those 16 years of age and older need a fishing license, and Kentucky Department of Fish and Wildlife rules and regulations apply. Poles, bait and fishing assistance will be available but please feel free to bring your own gear if you wish! Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

October 19, 2010: Nature Rocks! Family Nature Club: Creepy, Crawly Critters! @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). Learning about science can be fun, and you'll be sure to enjoy this afternoon of yucky, creepy, crawly fun! Enjoy some icky experiments, revolting recipes and creepy craft fun! Nature and science… a natural connection, and one that can be way cool! Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

November 16, 2010: Nature Rocks! Family Nature Club: Great Backyard Night Hike @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). Just because the sun goes down doesn't mean the outdoor fun ends! Join in as we learn the various constellations present, enjoy some night hike activities and more. Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

December 21, 2010: Nature Rocks! Family Nature Club: Holiday Habitat @ Wolf Creek National Fish Hatchery (WCNFH) Visitor/Environmental Education Center, 50 Kendall Road, Jamestown, Kentucky 42629 (5:00-6:30 p.m.). With the holidays upon us, many people start to think about visits home to see family and friends. Yes we all start to crave our favorite "habitat" home, but people aren't the only ones who need and love their habitat: Animals do too, and each one is unique! Come learn and share as we celebrate a home for the holidays for person, animals and plant alike! Fee: FREE. Contact Amanda Patrick, EE/Outreach Specialist at (270) 343-3797, via email at amanda_patrick@fws.gov, or on their website at http://www.fws.gov/WOLFCREEK/.

2011:

April 15-17, 2011: Kentucky Society of Natural History 2009 Spring Meeting @ Carter Caves State Resort Park, 344 Caveland Dr, Olive Hill, KY 41164, [(606) 286-4411]. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

April 29-May 1, 2011: Kentucky Ornithological Society (KOS) Annual Spring Meeting @ Barren River State Resort Park. For more information contact KOS at P.O. Box 463, Burlington, KY 41005 or via their website at http://www.biology.eku.edu/kos/default.htm.

September 30-October 2, 2011: Kentucky Society of Natural History 2011 Fall Meeting @ Cumberland Falls State Resort Park. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

2012:

April 2012 TBA: Kentucky Society of Natural History 2010 Spring Meeting @ Shephersdville Area. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

Fall 2011 TBA: Kentucky Society of Natural History 2011 Fall Meeting @ Whitley City area of Kentucky. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

2013:

April 2012 TBA: Kentucky Society of Natural History 2010 Spring Meeting @ Morehead Area. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

Fall 2011 TBA: Kentucky Society of Natural History 2011 Fall Meeting @ Kentucky. See upcoming newsletter for details or go to the website at http://www.ksnh.org.

The mission of the Kentucky Society of Natural History (KSNH) is to actively promote study and interest in Kentucky's rich natural heritage throughout the Commonwealth. Members are typically interested in a broad spectrum of natural sciences and related fields. Among the more prominent activities of the KSNH, are the annual Spring and Fall Conferences, selection of a "Naturalist of the Year", nature photography contests, research grants, and a variety of knowledgeable speakers and field trips. We invite anyone who shares our interests to **join us**. For membership information or the address of the nearest affiliated chapter, please contact:

KSNH, 3701 Fenholt Road, Louisville, KY 40218, or visit our website <http://www.ksnh.org> for the membership form. Membership dues are: Individual $15, Family $25, Full Time Student $7.50, Lifetime: $300.

The Kentucky Society of Natural History is an official 501(c) (3) tax-exempt nonprofit organization which was formed in 1939, and incorporated in 1943 in Louisville, Kentucky. All contributions to THE KENTUCKY SOCIETY OF NATURAL HISTORY are tax-deductible to the full extent of federal and state income tax laws.

Published quarterly, The Kentucky Naturalist News is the official newsletter of KSNH. Unsolicited contributions are encouraged. Please send articles to: **Barry Nichols, KNN Editor, P. O. Box 21182, Louisville, KY 40221.** You can also email newsletter submissions by sending them to kyfauna@iglou.com.

Kentucky Naturalist News Deadlines:

Issue	Deadline	Tentative Publish Date
Summer Issue	May 1, 2009	June 1, 2009
Fall Issue	August 1, 2009	September 1, 2009
Winter Issue	November 1, 2009	December 1, 2009
Spring Issue	February 1, 2010	March 1, 2010

For submissions, please cite references. To assist, you may use: http://www.lib.ncsu.edu/lobo2/citationbuilder/citationbuilder.php.

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